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Infancy. See page 413.
Clean Drinking Water. See page 414.

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HEALTH

A WEEKLY JOURNAL OF

DOMESTIC AND SANITARY SCIENCE.

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EDITED BY DR. ANDREW WILSON, F.R.S.E. &C.

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[The above letter, dated Sept., 1886, is from a medical gentleman in extensive practice in a large city in the North of Ireland.]

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◆ HEALTH ◆

EDITED BY

DR. ANDREW WILSON, F.R.S.E., &c.

LONDON: *FRIDAY, MARCH* 30, 1888.

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Notes by the Way

BY THE EDITOR.

"Health is the foundation of all our physical happiness."—*Herder.*

THE new half-year, volume of HEALTH (the eleventh) begins with our next number, for FRIDAY, April 6th. I may, therefore, renew my customary appeal to my readers that they should kindly recommend this journal and its educative and social aims to the notice of their friends. Knowing what HEALTH owes of old to such kind recommendations, I feel certain that an increase of its already large circulation will result, should my readers, as in former years, respond to the suggestion. For the many spontaneous expressions of approval of the aims of HEALTH, and of goodwill towards myself, which are continually being received, I have to return my sincere and grateful thanks.

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IN connection with the work of obtaining new subscribers to HEALTH, I may direct the attention of my readers to the scheme of Bonuses and Free Gifts published from week to week in our pages. This announcement will be found at page 419 of the present number.

THIS journal, it may not be out of place to add, has made its way to the front rank of periodicals devoted to the exposition of the laws of health, amidst a considerable amount of rivalry and much opposition. Confident in the excellence of its aims and policy as a free and unfettered expositor of health laws and health abuses, I have steadily endeavoured to conduct HEALTH on the lines whereon it was originally projected. The best proof of the wisdom of adherence to that policy is found in the steady success which has attended the journal. The public have apparently recognized that its teachings have been, in the main, sound and disinterested, and the inane cackle in which certain professional organs have, I venture to thing unworthily, indulged at its very existence, has in no sense discouraged or intimidated either contributors or Editor.

✣ ✣ ✣

THERE is a weak place somewhere in the policy of professional critics who in the one breath say one may and should teach the laws of health to the people, and who, in the next breath, object to the hints and advice on diet, living, and simple remedies given week by week to my correspondents. One insignificant organ of so-called "medical opinion," in commenting upon the replies given to our correspondents, urged that it was a direct violation of ethics to supply such information. But this microscopic critic conveniently forgot to reply to a former contention of mine, namely, that, according to his constricted lights, every manual of household medicine should also be logically placed on a kind of medical *index expurgatorius*. The real fact is that the public do not in the least concern themselves with what professional or trade-critics think or say. The people desire health-information and advice; and whether they obtain such information from the pages of a book, such as Cassell's "Family Physician," or from the columns of HEALTH, is a matter with which no professional man or body has any concern whatever.

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THIS is my final reply to the "medical terrorism" of which so much has of late been heard. Trades-unionism is a good thing in its way, but it has its abuses; and one attempted but unsuccessful abuse of medical trades-unionism is the notion that by means of something strangely resembling threats of evils to come, medical critics should stamp the popular literature of health out of existence. But certain persons will never awake to the fact that Mrs. Partington's broom can hardly be expected to sweep back the waves of public opinion.

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AND OF ALL CHEMISTS.

If, lastly, the medical critics could but see things as clearly as they ought, they might well rejoice that a journal like Health exists. I can assure them that a perusal of the correspondence sent to this journal for one week would open their eyes more widely than before to the enormous amount of quackery which is everywhere rampant, and to the fact that while never weary of warning the public against these modern vampires, Health has been the means of sending hundreds of patients to competent physicians and surgeons for successful treatment. To rescue the unwary from the hands of quacks is no small or unimportant part of the policy of this journal, which has always honestly and energetically defended and upheld the more liberal spirit of medicine and the interests of medical men, as opposed to the narrow bigotry of professional cliques, to whom one can only present one's unmitigated contempt.

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Recent researches regarding the part played by the germs—or "micro-organisms," as they are scientifically called—which are found in the digestive system, reveal the fact that at least eighteen different germs, exclusive of ferments and the spores or seeds of mould, are to be found in the human mouth. M. Vignal, to whose researches I allude, tells us that many germs are swallowed with the food. Of these, doubtless the gastric juice of the stomach kills a proportion—this, indeed, was Koch's contention regarding the cholera-germs which passed into the healthy stomach. Others again, he thinks, pass unharmed from the stomach into the intestine, and there perform a useful function in aiding digestion, and the absorption of food. Thus the "omnipresent germs" are not always things of evil import. It is at least strange that, somehow or other, the human body has come to include the germs it inhales or swallows in the list of agencies which assist the normal processes of the body.

✣ ✣ ✣

At the Parkes Museum, 74a, Margaret-street, Regent-street, London, W., a series of lectures and demonstrations for the instruction of sanitary inspectors will be given on Tuesdays and Fridays, at 8 p.m., as follows:—April 10th, (1) Introductory Lecture—General History, Principles, and Methods of Hygiene. Mr. A. Wynter Blyth, M.R.C.S.—April 13th, (2) Ventilation, Measurement of Cubic Space, &c. Sir Douglas Galton, K.C.B., F.R.S.—April 17th, (3) Water Supply, Drinking Water, Pollution of Water. Dr. Louis Parkes. (Pub. Health Cert. Lond.)—April 20th, (4) Drainage and Construction, Mr. E. C. Robins, F.S.A., F.R.I.B.A.—April 24th, (5) Sanitary Appliances. Prof. W. H. Corfield, M.A., M.D.—April 27th, (6) Scavenging, Disposal of Refuse and Sewage. Mr. H. Percy Boulnois, M.Inst.C.E.—May 1st, (7) Food (including Milk), Sale of Food and Drugs Act. Mr. Charles E. Cassal, F.C.S., F.I.C.—May 4th, (8) Infectious Diseases and Methods of Disinfection. Mr. Shirley F. Murphy, M.R.C.S.—May 8th (9) General Powers and Duties of Inspectors of Nuisances, Method of Inspection. Mr. J. F. J. Sykes, B.Sc. (Pub. Health), M.B.—May 11th, (10) Nature of Nuisances, including Nuisances the Abatement of which is Difficult. Mr. J. F. J. Sykes, B.Sc. (Pub. Health), M.B.—May 15th, (11) Sanitary Law—General Enactments, Public Health Act, 1875, Model Bye-Laws. Dr. Charles Kelly, F.R.C.P.—May 18th, (12) Metropolitan Acts, Bye-Laws of Metropolitan Board of Works. Mr. A. Wynter Blyth, M.R.C.S. A nominal fee only of five shillings for the course will be charged to cover expenses, and students attending the course will be granted free admission to the museum and library from April 1st to June 1st.

A very admirable little sixpenny pamphlet entitled "Exercises for Light Dumb Bells," by Richard Plunkett, has been sent me by Messrs. Clowes & Sons, the publishers thereof. This *brochure* is now in its second edition, and will supply a handy manual of instruction for those who desire light physical exercises, which, without tiring the body, will conduce to the full development of chest and muscles at large. The illustrations in the pamphlet aid the comprehension of the exercises. In the hands of an intelligent teacher, this little book should be the means of fostering a love for that regulated physical exercise which contributes so largely to healthy living.

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Of late, a goodly correspondence has been carried on in newspapers and magazines regarding the possibility of existence being maintained comfortably on incomes of varying amount. One writer, who, if I mistake not, started the controversy, doubted if life was worth living on £700 a year. Another writer found life tolerably enjoyable on a guinea a week. In another case, a man, his wife, and family, contrived to exist, and to save a little besides, on thirty shillings a week. The *locale* of the experiments in living within these varying incomes, I may add, was London.

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Such discussions are really futile and beside the mark, when one considers that the matter under discussion is entirely a relative one. It is relative to the individual and to his ideas of what constitutes comfort, happiness, or luxury. A famous man once declared that his richness really consisted in the fewness of his wants; and while to one man £700 a year represents fabulous wealth, to another it means painful poverty—so much depends upon the standpoint from which life and its necessities and enjoyments are regarded.

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The discussions to which I allude may, however, incidentally prove useful in one direction—that of showing the well-to-do who grumble at having to make both ends meet on an income of fair proportions, how happily some persons are able to live on half or a quarter of the sum which seems insufficient for their neighbours' wants. We live in a luxurious age, when even a modern anchorite may be excused from growling at the lack of comforts to which he has been accustomed as a matter of daily existence; and I suspect it is in paying for the luxuries of life and not in supplying its necessities that the shoe really pinches most of us.

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The questions recently discussed as a matter of mere income, are in reality matters of health. A simpler style of living, less extravagance in dress, the cultivation of less expensive pleasures, and of a taste for pursuits less costly than many of our modern ways and means of amusement, would enable many a man not only to save money, but to live more healthily, and more readily to attain length of days. "Society," so-called, has much to answer for in the matter of costly living. We need not surely become perfect Spartans in order to reduce the cost of living, to simplify our life, and at the same time to enjoy existence to the full.

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Lately the death was announced in Dublin of Mrs. Bridget Dempsy Coolehan, at the advanced age of 106 years. It is reported that Mrs. Coolehan's grandfather died in 1821 at the same age. Mrs. Elizabeth Stillman, of Newbury, who would have reached the age of 102 in April next, died on February 28th. Mrs. Stillman's father died at the great age of 105 years.—Miss Caroline Heathorne, well known as the "Maid of Kent," died on the 3rd February, at Maidstone, in her 105th year.

us drinke

Original Essays

"Life is not to live, but to be well."—*Martial.*

SOME CONSIDERATIONS REGARDING LENGTH OF DAYS.

By Dr. Andrew Wilson.

Length of days, on tolerably ancient authority, is to be regarded as especially representing the gift of wisdom. Under the title "wisdom" we may include, in a modern sense at least, the practice of those laws of health and physical well-being which have been proved to contribute, in the matter of their due observance, to the longevity of the race. No one doubts that, say, of two men, one attending to the laws of health, and the other neglecting these laws, the former will possess many thousands of chances of attaining old age over the latter.

In the multiplicity of ways of injuring health and of destroying our prospects of attaining length of days, ignorance of hygienic conditions counts for everything. Many of us pass into an early grave simply because we do not know how to avoid the terror that walks abroad at noonday, or the pestilence that stalks through the watches of the night. Neglect of sanitation cuts short our chances of long life by engendering the typhoid fever that breeds in sewage filth, by permitting the overcrowding that gives birth to typhus fever, and by rendering people careless of infectious diseases and of their disinfection. Very clear is it, that with due attention conversely paid to the common sources of disease that are perpetually battering at the gates of life, most of us may live out to the full our allotted span. Excluding cases in which persons are born into the world of diseased or unhealthy stock, and who accordingly start life handicapped as it were in the race, there remains no reason why the majority of us should not live on far beyond the allotted term of three score years and ten.

In Health, some time ago, I directed attention to the interesting report on "Centenarians," which proceeded from the researches of Professor Humphry of Cambridge. To those papers I refer those of my readers who may wish for the bare details regarding the life-histories of the very aged persons with whose record the learned Professor deals. Dr. Burney Yeo, as was mentioned in last week's Health, has taken up the subject of "Long Life, and how to Attain it," in the current number of the *Nineteenth Century*. It is to certain curious phases of this matter of longevity that I desire to refer on the present occasion.

First of all may be noted the remarkable circumstance that long life seems to have been attained, in many instances, apart from a strict observance of health-laws, and certainly apart from what one may ordinarily designate as careful living. We come to the conclusion, indeed, that while long life is not by any means a matter of chance, it is often scarcely to be attributed to good guidance of life. Some of the instances quoted by Drs. Humphry and Yeo are notorious instances to the contrary. A certain proportion of the units who attained quite a patriarchal age were anything but careful livers, and might rightly have been denominated free livers in addition. There seems to have existed in such cases a very hale and sound constitution to begin with. This condition in fact might be said to be the *sine quâ non* of longevity. The hereditary haleness of body seems to have resisted all the follies and the errors of living exemplified in the lives of the subjects in question. Abuses of foods, drinks, and habits, which tell upon ordinary mankind in the way of shortening life, seem to have had little effect on certain persons who lived on to an extreme old age, and who began life apparently rejoicing in the primary essential of a sound and flawless *physique*.

Example is proverbially more powerful than precept. Let us, therefore, turn to facts for corroboration of the above statements. Dr. Yeo, for instance, gives the following account of the history of Old Parr, of longevity-fame.

"Professor Owen," says our author, "is perhaps unduly sceptical with regard to the longevity of Old Parr, and referring to the fact that the celebrated Harvey made an examination of his body after death (some particulars of which I shall presently quote), says, 'The autopsy itself, agreeing with the story of Parr's concupiscence, indicates an unusually sound and vigorous condition for a hale, say, nonagenarian. There is no authentic evidence or scientifically acceptable ground of Parr's precise age.' Now, in estimating the age of Old Parr at ninety, Professor Owen appears to me to have disregarded the fact—with which, however, he may have been, at that time, imperfectly acquainted—that centenarians are not now so very uncommon, and we have no reason for supposing that they are of more frequent occurrence now than they were in the time of Old Parr, while the contemporary existence of several persons of ninety years of age and over falls within the personal experience of most persons. It is, therefore, incredible that such a fuss should have been made with Old Parr that he should have been brought to London and presented to the king, that his body should have been dissected by the first physician of his time, and that he should have been buried in Westminster Abbey, simply because he was of the very commonplace age of ninety years, or a little over!

"Dr. William Harvey, the discoverer of the circulation of the blood, made a *post mortem* examination of Old Parr by the command of Charles the First. The following is extracted from Harvey's report. He expresses no doubt about his age, which is stated to have been 152 years and 9 months. Body muscular, chest and fore-arms hairy, the hair still black. [Then some striking evidence of long-sustained vitality.] Chest broad and ample; lungs, nowise fungous, adhered, especially on right side, to ribs; heart large, thick, and fibrous, with considerable quantity of fat; cartilages of ribs soft and flexible; stomach and intestines and all the viscera sound; kidneys healthy; . . . . brain healthy, firm and hard to touch.

"As to his habits, it is added that he had observed no rules or regular time for eating, was ready to discuss any kind of eatable that was at hand; his ordinary diet consisting of sub-rancid cheese and milk in every form, coarse and hard bread, and small drink, generally sour whey. On this sorry fare, but living in his home free from care, did this poor man attain to such length of days. . . . He was accustomed to walk about, slightly supported between two persons; had been blind for twenty years, heard extremely well, understood all that was said to him, answered immediately to questions,

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and had perfect apprehension of any matter in hand; his memory was, however, greatly impaired. . . . He was accustomed, even in his 130th year, to engage lustily in every kind of agricultural labour, whereby he earned his bread; and he had, even then, the strength required to thresh the corn."

It is perfectly evident from the foregoing account that Old Parr could not be denominated a careful liver in the sense in which we ordinarily employ the term. The details regarding his dietary show what we may justly name a disregard for all the rules whereby life may be conserved in the aged person. The case of old Parr, as well as certain examples given by Dr. Humphry, would seem to warrant the opinion of the *Quarterly Reviewer* who declared that longevity is "as common in persons who defy regimen and sobriety as in those who most strictly enforce them." Without going quite so far, we may hold that the exceptional cases prove that there is much truth in the *Reviewer's* words.

Dr. Yeo, again, quotes the cases of Macklin, the actor, and of Cardinal de Salis. He says that "Of centenarians who certainly were not abstainers the following instances may be mentioned: Cardinal de Salis, Archbishop of Seville, died in his 110th year in 1785, with every faculty, except his hearing, unimpaired. He imputed his green old age to a sober, studious life, regular exercise, and a good conscience, as well as *a pint of the best sherry at each meal*, except in very cold weather, when he *allowed himself a third more*.

"Macklin, the actor, who lived 107 years 2 months and 10 days, up to forty lived, his biographer states, very irregularly, *drank hard*, sat up late at night, and took violent exercise. Subsequent to that period he proceeded by rule. He drank tea, *porter, wine, punch*, and ate fish, flesh, fowl, &c., till he was seventy, but he never drank to excess. His usual quantity *was seven or eight glasses of wine*. If ever he was prevailed upon to drink more, he always took Anderson's Scotch pills going to bed at night. This (he said) kept his head from aching the next morning. He was always moderate at his meals, *never abstemious*. At seventy he gave up tea, because it disagreed with him, and took milk (always boiled) instead; he also had bread boiled in his milk, which he sweetened with brown sugar till it was almost a syrup. . . . He was a great lover of eggs, custards, and jellies. *His drink* with his meals for the last forty years of his life was *white wine* and *water* made very sweet."

"Mr. Lionel Tollemache quotes two instances of drunkards who lived over a century: Philip Laroque, who 'went to bed intoxicated at least two nights every week till he was 100 years old,' and Thomas Whittington, who lived to 107, and 'was an habitual drunkard.' He 'never took any other liquids, as liquids, into his stomach than ardent spirits—London gin; of which compound, until within a fortnight of his death, he took from a pint to a pint and a half daily.'"

While a great many of Dr. Humphry's centenarians were abstemious persons or abstainers, there were several who infringed the rule of temperance, as there were others again who appeared to live an existence of tolerably careless kind in other respects.

Professor Humphry's own words may be here quoted in illustration of this latter remark: "The greater number (60 per cent.) are 'moderate' eaters, 30 per cent. are 'small' eaters, and 9 per cent. only are 'large' eaters. A fair proportion (40 per cent.) are in the habit of taking a little alcohol, which, in the form of beer, whisky, or brandy, they feel to be a comfort and support, alleviating the sense of sinking which many feel; and perhaps this small quantity, especially if taken in the latter part of the day, does some real good. A smaller proportion take rather more, and are classed as 'moderate' drinkers. A considerable number, however, 36 per cent., take none at all, and very few (2·5 per cent.) are described as taking much. It is also observed that a large number (62 per cent.) take but little animal food; 32 per cent. partake of it moderately; 3 per cent. take none at all; and 1·1 per cent. only take it in considerable quantity. It may commonly be observed that as persons advance in years and lessen in activity, the inclination for animal food diminishes. Most of our old people are content with about three meals a day. We now and then meet with old persons who eat rather ravenously and frequently, thinking perhaps it is necessary to do so in order to maintain their strength, and that the need for so doing is indicated by the sense of sinking at the stomach which they experience. These instances however are very exceptional; and it is probable that a small quantity of cod-liver oil, taken once or twice daily in a little wine or spirit, would relieve the sense of sinking, and would promote digestion and nutrition, and so maintain strength in a safer and better manner than an extra and quickly swallowed amount of food."

The number of "moderate drinkers" in the above computation is startling enough, when, indeed, we bear in mind the sins and consequences in the way of ill-health and shortened life which are popularly and professionally believed to follow that practice. Indeed, the best proof of the correctness of the view that long life must often depend upon an innately sound constitution, and not upon the strict observance of health-laws, is afforded by the mere perusal of Dr. Humphry's alcohol returns for his aged males:—Alcohol.—298 returns. *None*.—28; besides these, one "never till 30," and another "none after 60." *Little* (under 1 pint).—95; of these, one took a quarter and one half a pint of beer daily. *Moderate* (1 to 2 pints).—112; of these, six took 1 to 2 pints of beer or porter daily, one 4 glasses of wine, one half a pint of claret, one was an abstainer till 40, one "little in early life," one "much in early life," one took a little rum, one had "tendency to drink," one "much at times," one "did not take alcohol daily, but occasionally to excess; 4 pints of beer made him tipsy." *Much* (more than 2 pints).—45; of these, two were "free livers," two "much beer, free livers," one "very much beer," one "much beer regularly," two 2 to 3 pints of beer, one "2 to 4 pints of beer all his life," one 4 pints of beer daily, one 6 pints of beer often, three 3 to 5 pints of beer, one "in early life never intemperate," one "drank heavily in early life," one "heavy drinker, able to stand large quantities," one "much of all kinds," one "much port," one "three-fourths of a bottle of Marsala for years," one "often drunk," one "freely, never too much," one took 5 ounces of rum daily, one "a pint and a half of wine and spirits daily for years," one "3 glasses of whiskey and wine," one "6 ounces of whiskey," one "drank all he could get," three "much when they could get it," one was a publican, one "drank freely of rum (1 pint daily) till 46, none since," one "took 6 pints of beer and much spirits, was a great drinker till 6 years ago, never went to bed sober if he could get beer," one "often drank a bottle of rum before breakfast when in Australia."

If we also extract his returns for the females we may find a like corroboration of the views above expressed:—Alcohol.—232 returns. *None*.—54. *Very little*.—2. *Little*.—109; one of these "none till 35." *Moderate*.—60; one of these "none till 40." *Much*.—7; one of these

was a notorious drinker, clocked up 200 times for being drunk, father died aged 90, and brother died aged 70, both heavy drinkers.

These returns, then, dealing with the matter of careful living in the matter of alcohol and with the reverse state, may suffice to show that while a large proportion of centenarians are undoubtedly abstemious or abstainers, we have, nevertheless, to face the fact that a certain ratio of cases present us with the opposite state of things. My original contention, that it is to a sound constitution that we primarily owe whatever of longevity we may see, appears to hold good in face of the facts just cited. No one may deny that care in foods, drinks, and habits does powerfully aid nature in her efforts to withstand the onset of age. It is, doubtless, also open to argument whether the very aged persons who exceeded the bounds of moderation might not have lived even longer had they exhibited greater care in the regulation of their lives. Be that as it may, we have to face the facts as they stand. In respect to the attainment of great age by careless or free livers, we can only fall back on the theory of a very sound body to start with, and one such as resisted the misdirected efforts of such persons in their unwitting attempts to shorten life.

Another phase worthy of remark among the multifarious points to which the discussion of longevity gives rise, is that connected with the social status of the persons who composed the band of centenarians. Dr. Yeo remarks that "astonishment has often been expressed at the comparatively large number of cases of centenarianism that are drawn from the poorer classes." I agree with him in thinking that the conditions which make for "sobriety, temperance, and avoidance of excess" are most likely to be represented among those of scanty means, and are exactly the conditions which militate in favour of longevity. Again, calmness of mind, a life led apart "from the madding crowd," freedom from worry, and absence of strain of body and mind, are unquestionably points to be carefully taken into account in dealing with the causes of longevity. If we add to the above conditions, the special quality or nature of the nervous system as the ruler and controller of the organism, we may be said to have summarized a few of the leading features in the matter of long life and its causes.

The whole subject is, however, as complex as it is interesting, and my remarks have been indited as much with the view of demonstrating the difficulties of the topic, as of showing how carefully all argumentation, regarding the subject of longevity, should be conducted. After all, extremely long life, like most other matters of existence, will be found to be a personal matter, and one relative to the individual history rather than to any general conditions prevailing among the populace at large.

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Personal Health

"Be timely wise;
With health all taste of pleasure flies."—*Gay.*

HEMP-EATERS AND HEMP-EATING.

APART from the Nsairie, or hemp-eating sectaries of Northern Syria—the Hashashin or Assassins of the Middle Ages — who regularly madden themselves to religious ecstasy with the drug, the eating, drinking, and smoking of hemp, is as common in the East as dram-drinking in Western lands. From Morocco and Fez right away to Bokhara and Samarkand, hemp in some form or other is a favourite stimulant and solace of all classes of Moslems. It is prepared for use in various ways. In Syria the leaves and stem are dried, cut small, and an infusion prepared, which is drunk well sweetened. The Moghrebs pound the leaves to a fine powder, mix this with tobacco, and smoke the mixture in the form of small cigarettes or through a narghilé. The smoke, which is thick, white, and opaque, is drawn into the lungs, so as to bring the fumes of the drug in direct contact with the blood. In Palestine the powdered hemp is mixed with honey, flour, and spice, and rolled into small cakes called "majoon."

In Mesopotamia and Persia the leaves are infused, and the infusion concentrated until it thickens; butter and sugar are then added, and the resulting mass kneaded into small balls about the size of a nut. These are called "dawamesk," and are carried about by the regular hemp-eater, who takes from four to six of the boluses in the course of each day. But the commonest form of hemp-eating is to take a couple of teaspoonfuls of the finely-powdered leaves, mixed with an equal quantity of pounded sugar; and upon this a pipe, accompanied by a cup of hot and strong coffee, well-sweetened. But the Eastern hashashin differ just as our dram-drinkers do in these matters. Some take a little and only occasionally; others, large quantities and regularly. Some take their bolus of dawamesk day after day for years; others indulge from time to time in a regular orgie, in which six or eight join, as in a Persian drinking bout. However, there is one infallible sign by which a "hashash" may be known—his predilection for sugar and sweetmeats. When a traveller encounters a Moslem who prefers sweets and sweetened things to more substantial foods, it is safe to put him down for a hemp-eater. Sugar adds to the stimulating powers of the drug, while lessening its harmful effects upon the system.

Speaking from personal knowledge, the writer of this paper can assert that the first experiences of a hemp-eater are far from agreeable. For about an hour after taking a couple of spoonfuls of the hemp, no effects whatever are evident. Then a feeling of chilliness comes over one, increasing to a sensation of severe cold. Then the pulse rises; and, after taking a whiff or two at the narghilé as it is passed round, the full toxic effects of the powder are experienced. The room seems to turn round; the people near appear to rise to the ceiling; the pulse beats with extreme rapidity, and the throbbing of the heart becomes audible. The will remains unaffected; but thinking becomes impossible, for one cannot recollect anything—the ideas seem to slip away. In another ten minutes the characteristic indications of hemp-eating appear. Every object around attains a monstrous size. Men and women seem of Brobdingnagian proportions, the cushions upon which one sits seem fit for giants, and any trifling obstacle in the way

when you attempt to walk appears so big that you fear to step over it. The room in which you may be sitting seems to stretch beyond the range of sight, and one fancies the street outside is receding before one's very eyes. All sense of time is lost now, and when he is spoken to the hemp-eater fancies there are long and apparently senseless intervals between the words. His own attempts at speech are similarly marked; the syllables come slowly, laboriously, and minutes seem to elapse between the beginning and end of a word. In this stage, it is usual to partake of more coffee, which changes the nature of the sensations. A whiff at the narghilé that always accompanies the beverage, and the body seems to rise into the air and float about, though, inexplicably enough, the feet keep firmly pressed to the ground. Then one's legs and arms appear to drop off, and life and sensation concentrate themselves, to one's thinking, in the back of the head, which feels full to bursting. Gradually strength leaves the smoker; the pipe slips from the nerveless fingers; will altogether fails, and the body seems to rise and float away into space. A heavy dreamless sleep usually succeeds such an indulgence in the drug, and, as a rule, the novice awakes none the worse for the evening's experiment. A little lemon-juice removes any sensation of nausea or light headache that may ensue.

Old and experienced hemp-eaters go very methodically to work. They say that to relish hemp one must first abstain from all stimulating food and drink for a brief period: for only after a short fast can one taste to the full the delights of hashish and render one's system fully susceptible to its influence. So, for several days previous to the "orgie," the experienced hemp-eater eats no meat, drinks neither wine nor spirit, lives mainly upon vegetable foods, light pastry, and ripe fruits, and smokes little. On the day of the debauch he rises very early, and fasts till the afternoon, when the friends who are to join him arrive. They prepare for dinner by taking a strongly-charged pipe and inhaling the thick white smoke. A light meal is then served, in which plenty of sweet pastry figures, and each of the company retires to his cushion prepared for the evening's indulgence. Musicians are stationed at the end of the apartment, dancing-girls are introduced, or if the host is a very wealthy man, he orders his own slaves in. Hemp boluses are passed round, and the pipes well charged with the drug. For this purpose, tobacco is first laid in the bowl, upon this a small charge of pure hashish extract is placed, and the whole is fired by means of a glowing ember of charcoal and saltpetre, which has been mixed with honey and dried. Strong and well-sweetened coffee is handed round; and while the dancing and music go on, the smokers begin. Lounging back, they suck the smoke into the lungs and air-passages, sending it forth again through the widely-distended nostrils; and, gazing upon the forms and faces posturing and revolving before them, the hashashin swim off in a sea of blissful content that verges upon ecstasy.

As soon as the pipe is exhausted, strong coffee without sugar is taken, and this rouses the dreamers from their vision of delight. But a "bolus" of hemp-cake, and another pipe well charged, stimulates afresh the excited imagination, and sends them off again into their dreamland. The singers chant their love songs, and the almehs sway in their passionate dances. This goes on for hours, fresh pipes and coffee being passed round at intervals, the smokers waking from one dream only to go off into another. Such an orgie, indeed, is sometimes protracted for two or three days. Then lassitude and exhaustion ensue, and the hashash experiences a sort of revulsion against the drug, which lasts for some weeks, when the longing for it returns. In many parts—among the Bektäches, for example—there are regular gatherings for hemp-smoking, just as the Nsairie of Syria meet on certain days to drink hemp-tea. The poorer classes find opportunity for indulging in the drug in the so-called "meshash" or hemp-houses. These are forbidden in most Moslem countries. But though the law may prohibit it cannot suppress these places.—*St. James's Gazette.*

Parkes Museum.—At a recent meeting, Sir Douglas Galton, K.C.B., in the chair, a lecture was given by Miss Chreiman on "Physical Culture," illustrated by a few of her girl-pupils, who in the performance of agile and most graceful ball, dumb bell, and free exercise gave practical demonstration of the useful lessons the lecturer had been enunciating. Miss Chreiman desired particularly to convince her audience of the sound wisdom and religious duty of an enlightened pursuit of health, and she showed, both by argument and by illustration from classic ground, that the perfect development of the human body was the happiest and easiest method of attaining this great end. She proved further that physical culture was the truest groundwork for good intellectual structure, and also that it was a powerful factor in the moral training of our girls, affording them, in the enjoyment of the physical exercise of their own bodies, sufficient motive for their work, having no need to resort to the lowering effect of competition; a practice which she entirely condemned. Miss Chreiman explained that her "system" had for its object the improvement to perfection of the entire physical condition of her pupils as individuals, so as by means of careful and scientific observation of the organs of sight and hearing, as well as of the muscular system, and judicious training by exercise of the defective or weaker parts to bring the whole body into perfect adjustment, and produce that true balance of body, mind, and manners which is recognized at once as gracefulness and graciousness in women.

German Industrial Dwellings.—In the glass works at Waldhof, which were established by a French company in 1853, in consequence of large import duties levied on plate glass imported from France into the Grand Duchy of Baden, the day's work is from six to six, with one hour and a half for meals, and the wages vary from 2s. 5d. to nearly 5s. a day. Three hundred and forty dwellings lodge the 1,800 inhabitants of the village, and they are so well appointed and so arranged that each family has its apartments entirely separate from every other family. The dwellings are for the most part very simple, yet very convenient and comfortable. A piece of land—a flower and vegetable garden—is attached to each dwelling, also a stable, in which a cow or a couple of goats may be kept. The houses are kept in repair free of charge, and are rent free. Grocery and provision stores have been established by the company, where all necessaries can be purchased at cost price; the goods sold are of the best, the principal *employés* purchasing at the same place as the poorest workman. If there is a balance of profit at the end of the month prices are reduced until it is worked off. Schools are provided, to which the children must go until they are fifteen; libraries have been established, and a hospital attended by sisters of charity supported by the company exists in the village. No one ever thinks of emigrating, and it is not unusual to find three generations—grandfather, father, and son—working side by side.

The Family Circle

"The child is father of the man."—*Wordsworth.*
"In bringing up a child, think of its old age."—*Joubert.*

DIET IN INFANCY.

THERE can be no doubt that great advances are being made in the manner of caring for infants, simply and solely because the subject of infant dietetics is receiving due attention. Very little, for example, has been said about the quantity of water to be given a child, and it is probable that only too many infants have too little of it. Even the products of healthy digestion may harm the stomach if there be an absence of water. "I have, therefore, considered it necessary," says Dr. A. Jacobi, "in preparing the rules for the feeding of children, which the New York Health Department has annually published and distributed since 1872, to insist upon giving infants, who cannot ask in so many words for it, an occasional drink of water, at least during the hot weather."

As perspiration, diarrhœa, wasting away, occasional fever, lessen the amount of water in the blood-vessels, the blood becomes thicker, and may form little clots in the small veins. "In the brain they lead to convulsions and defective innervation; in the limbs to œdema or gangrene. The remedy is water in sufficient quantities," —if need be, in enemata.

There is nothing among the elements so good to wash out the internal tissues as water. It promotes tissue change, sets the excretory organs fairly under headway, relieves an overloaded liver, and will act like a perfect charm on an irritated kidney. "In laryngitis and bronchitis it liquifies viscid expectoration, and in many forms of constipation it acts beneficially.

Abstinence, on the other hand, also has its victories no less pronounced than imbibition. Dr. Jacobi says, "For some forms of acute gastro-enteritis, where vomiting and diarrhœa are excessive, the only salvation is in total abstinence for from four to eight hours. Not infrequently the turning point in the course of the threatened danger dates from the commencement of what appears to be cruel starvation."

A point the writer already quoted lays stress upon is what sugar shall be added to cow's milk, when diluted for an infant. Now if there is one point which appears certain, it is that sugar of milk undergoes acetification quicker than cane-sugar. Why then should physicians go out of their way to inconvenience people unnecessarily to add sugar of milk instead of cane sugar to their infants' food. Upon this subject we may say that we quite agree with a recent medical writer, who declared in favour of a malt food, the sugar in which is maltose. This writer added half a teaspoonful of Malt Extract (Kepler's) to each pint of cow's milk given to his child, and, as a consequence, the youngster thrived as it had not done on anything else. The value of malt sugar is not questioned.

In this consideration of simple things we would direct attention to common salt, one of the most important proximate principles man takes into his stomach. Its uses in the economy are manifold, and one-tenth of all there is of it in the system is displaced daily. Cow's milk contains more potassium than sodium, and the presence of common salt "lessens the solid coagulation of milk by either rennet or gastric juice. Thus, cow's milk ought never to be given without table salt, and the latter ought to be added to woman's milk when it behaves like cow's milk in regard to solid curdling and consequent indigestibility." The addition of the soluble malt preparation, as above recommended, effectually overcomes the curdling and indigestibility.

IN AND OUT OF CONDITION.

WHAT is the physiological explanation of being in and out of condition? The phenomena which mark the two states are sufficiently distinctive, but on what do they depend? My attention has been drawn to this question, during the late vacation, from a personal experience. I leave the London life out of condition, I enter the country to get into condition, and I pass from one stage into the other. At first, out of condition, every physical exertion beyond the ordinary is practically a disease. A few miles' exercise on foot or on the tricycle induces weariness of body, depression of spirits, diminished appetite, impaired sleep, profuse action of the skin, and irregular action of the kidneys and bowels. A day or two of rest, physical and mental, and a return to the exercise is followed by few of these untoward symptoms. Thus gradually the exercise may be increased and increased, until the bad symptoms pass away altogether, although ten times the labour which previously did so much harm is performed. Weariness of body is not experienced, the mind is free from depression and active, the appetite is excellent, the sleep perfect, the skin in good tone, and all the secretions natural. Thirty or forty miles of cycling on ordinary roads, with full complement of hill work, causes less fatigue, physical and mental, than did four when the body was out of condition. Moreover, capacity for daily work, professional and literary, is improved, so that more of both can be carried out with brighter accuracy and lighter heart. I am "in condition." These are the facts. What is the explanation of them?

Is it the nervous system, the muscular, or the glandular, that has been changed in function to produce so many striking improvements in the organic life? Has something which had accumulated in the muscular or nervous systems, and which blocked the way, been disposed of by the fresh air and brisk exercise? Or, has the fresh air and brisk exercise called forth some nutritive functions which had become latent, and until recruited were too easily played out? The answer is difficult. I cannot be sure whether, in regard to weariness, it is the nervous or the muscular power which first gives way. It feels as if it were the muscular, yet I think it must be in the organic nervous or ganglionic chain that the failure is primarily recorded, and that the muscular failure follows. "Out of condition," the body retains in its muscles some organic chemical product which impairs irritability and accumulates, until it literally impedes action; while, at the same time, the organic nervous centres lose their activity, to some extent waste, and fail in their duty. "In condition," the foreign product has been borne off, the nervous centres have regained their nutrition and power, and the secreting organs have become equal and regular under the improved nervous supply which feeds and regulates them for their functional activity.

For some industrious student of physic who has time and means for the work there is a fine field of experimental research lying wide open on the question here so briefly discussed. The question affects the whole of those important and useful members of the community who work by thinking, who lose the power of thinking through work, and who, getting deeply out of condition, too often never get safely into condition again.—*Dr. Richardson in the "Asclepiad."*

Public Health

"Health is the first Wealth."—*Emerson.*

CLEAN DRINKING-WATER: A TALK ABOUT FILTERS.

By Edwin J. Howe, M.D.

Among the subjects that claim the study of the sanitarian, there is none that has a closer relation to public health, and hence none more worthy of careful investigation, than the water we drink. Receiving it, as we do, from varied sources—from spring, well, brook, or river—its character varies greatly; and, while in its purity bringing with it refreshment and health, in a polluted condition it too often carries in its wake disease and death.

The study of sanitary science during the last few years has demonstrated beyond a doubt that many severe epidemics have arisen from the use of impure water, as the reading of Witthaus, Parkes, Buck, Flint, Pavy, or other writers on the subject, will clearly prove.

When we remember that water has greater solvent properties than any other liquid known, we can readily understand how it often becomes such a disease-spreading medium. Besides carrying with it vegetable and organic impurities in suspension, it dissolves many of those that are the most subtle and dangerous to the human organization. The dangers of drinking impure water may best be presented in a few quotations from well-known authorities.

Pavy, in "Food and Dietetics," says: "Water has much to answer for in the causation of disease. . . . It" (polluted water) "is acknowledged to be one of the common causes of dysentery, and has been alleged, when derived from a marshy district, to be capable of producing malarial fever and its concomitant, enlargement of the spleen. . . . Typhoid has been frequently communicated through the medium of water. Milk, adulterated with polluted water, has been the cause of serious outbreaks of fever." Parkes, in his "Manual of Practical Hygiene," shows that the baneful effects of polluted water were known to the ancient Greeks. Hippocrates, who was born 460 B.C., asserts, "The spleens of those who drink the water of marshes become enlarged and hard." Parkes considers typhoid, cholera, scarlet fever, and diphtheria, and some forms of skin-disease, "likely to be propagated by means of water."

Polluted water that has been frozen, though improved by the freezing, does not become innocuous. "Ice and snow may be the means of conveying malarial poisons to places at a distance," by distributing organic matter held in suspension. Dr. Edwards, of Montreal, found two grains of organic matter to the gallon of melted shore-ice, and one grain to the gallon of river-ice. One writer (Pavy) says, "River-water and the water of shallow wells should always be regarded with suspicion," and he adds, "There is evidence to show that the most serious consequences have arisen from the consumption of impure water." Buck, in "Hygiene and Public Health," says, "The weight of evidence and authority favours the idea that the drinking-water may become the cause of disease, and in drinking a polluted water one always runs more or less risk." The River Pollution Commission of London, after analyzing water from different sources, reported dangerous "river-water to which sewage gains access."

The conclusion from the above quotations is, not that one should abstain from drinking water on account of the difficulty in obtaining it pure, but that proper precautions should be observed to obtain it pure. Water is Nature's means of slaking thirst, and with its refreshing properties combines valuable therapeutic qualities.

An excellent article, published in the *Boston Journal of Chemistry*, in treating of the curative value of water, says: "We notice the salutary influence of water-drinking upon many of those who resort to the so-called mineral springs which abound in the country. It is not necessary that these springs should hold abnormal quantities of salts of any kind to effect cures; it is only necessary that the water should be pure. Ordinary springs, such as are found in every farmer's pasture, are curative springs if the waters are used freely by those who suffer from certain gastric or renal difficulties." This writer asserts that the best-known of our Eastern mineral waters shows, on analysis, that its curative value consists solely in its purity.

It may be truthfully asserted that it is impossible to procure perfectly pure water. "Even distilled water and fresh rain-water contain some ammonia, carbonic acid, and other matters which detract from their purity; while the best water from rivers, wells, ponds, and tanks contains a large number of chemical compounds, chiefly salts." The skilful use of the microscope would condemn the water from many sources for drinking purposes which now is considered pure. But while we cannot obtain strictly pure water, even by distillation, we can obtain it so pure that it will meet our demands, and that without danger to the consumer's health. The means by which this may be accomplished is filtration.

A filter is an apparatus for separating from fluids the foreign substances mechanically intermixed with them and held in suspension. While this is all that most filters aim to accomplish, yet experiments show that a filtering material may be used which very markedly diminishes the foreign bodies usually held in solution in water, and also removes those held in suspension.

The devices that have been used and are now employed for filtering purposes are very numerous. Tracing their history from the old Hippocratic sleeve, which was a cone-shaped bag of cotton or wool, we find, among others, the following materials: Thick, unsized paper; cloth of various texture; sand; asbestus; animal charcoal; vegetable charcoal; felt; porous stones of various kinds; spongy iron; porous earthenware; perforated metallic disks; sponge; carferal, a composition consisting of a mixture of charcoal, iron, and clay; silicated carbon; ground slag, or compounds of two or more of these substances mentioned.

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Jottings from the Journals

"Th' ingredients of health and long life are
Great temperance, open air,
Easy labour, little care."—*Sir Philip Sydney.*

Public Hot-Water System at Boston.—A plant for the distribution of hot-water is (*Engineering* says) being installed in the streets of Boston, United States. About 13,000 ft. of mains have been laid under the streets, and a large amount of lateral connections are in progress. Instead of using steam for distribution, as in the successful steam company in the city of New York, hot water under a pressure of about 300 lb. to the square inch, and heated to 350 degs. to 400 degs., is used. The boilers are a type of water-tube boilers designed for carrying the high pressure required by the system, which consists of two series of pipes, the supply-pipe being 4 in. in diameter and the returns 8 in. These pipes are thoroughly covered by non-conductors of mineral wool and asbestos paper, and rest upon rollers, and also have suitable stuffing-boxes at frequent distances to allow for expansion and contraction. The tunnel or subway containing the pipes is surrounded by a double row of brick-work with an air-space between, and frequent man-holes lead to the surface. It is proposed to use this system for steam-heating, making use of reducing-valves to diminish the pressure from the water-pressure of 300 lb. to the square inch to some convenient amount, allowing it to expand into steam; the portion of the water which is not converted into steam will be able to return to the system through the large return-pipes before referred to. The basis upon which payments are to be made by each customer will be according to the amount of heat required, which will be ascertained by means of water-meters, measuring its quantity, and recording thermometers, which will indicate its temperature. In addition to ordinary purposes for which steam is used, it is the intention of applying it for protection against fire in the hollow spaces of buildings. It is estimated that there are 1,000 buildings within the area selected for the work of the company, and containing 130,000,000 cubic feet of space requiring artificial heat in cold weather. This, in addition to the amount of steam-power required for elevators and some minor manufactures, will represent an aggregate of 10,000 horse-power from the station. There is much in this system which is ingenious and valuable; but it is evident that its success will depend upon the exact conditions of carrying hot water at this enormous pressure and temperature, and on the amount of heat brought back to the station in the return mains, whose pressure is at present 175 lbs. Up to the date of our latest information on the subject, but few services have been laid, but the method of heating has thus far proved satisfactory to the patrons. The pressure on the boilers is 200 lbs., and increased in the mains by means of pumps to 300 lbs. The frictional loss in circulating the water without heating through 13,000 ft. of mains amounts to 30 lbs. to the square inch.

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The Physical Relief of Mental Excitement.—When an animal or person is in a state of mental excitation, relief is often sought by physical movement. A wild animal runs about in its cage; a man runs or walks off the oppression he experiences. It would, at first sight, seem as if the combination of the two kinds of excitement would increase the oppression and the danger, for both quicken the heart and relax the tension of the minute peripheral circulation. The fact, however, stands differently; the mental excitement is quieted by the physical. The explanation appears to me to be that the physical excitement catches up, so to speak, the mental, and prevents the circulation from becoming suddenly exhausted on withdrawal of the extra mental stimulus. A little longer continuance of the mental over-action, and with the necessary failure of that over-action there would be syncope or collapse; but under the physical impulse, a new part, purely motor, of the nervous system takes up the burthen, the spinal cord relieves the brain, and the mental organs having time to recover themselves, the balance or equilibrium is restored. Thus we do, in truth walk off our annoyances, and by healthy exercise relieve the worries and troubles of the mind. The above applies to perturbed or violent conditions of mind, but in another way it applies also to less demonstrative states and conditions. The student, the writer, the reader who feels the oppression of excessive mental work holds proof in hand, when he construes the fact naturally, that his mental excitement has, unconsciously in this case, worked out his heart. He takes a moderate walk, and is restored to equilibrium. That is the natural cure,—a cure every over-worked man ought to know and act upon.—*Dr. Richardson in the "Asclepiad."*

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The Thermal Death-Point of Bacteria.—Dr. George M. Sternberg, U.S.A., the well-known bacteriologist, has been for some time experimenting on the thermal death-point of pathogenic micro-organisms. He has published his results in the *American Journal of the Medical Sciences.* All the tests were made with moist heat, ten minutes being the time of exposure to the given temperature. The absence of growth after eight or ten days is regarded by Dr. Sternberg as evidence that the vitality of the test-organism has been destroyed by the temperature to which it was exposed. No attempt has been made to fix the thermal death-point within narrower limits than 2 degs. C., and the lowest temperature is given which has been found, in the experiments made, to destroy all of the organisms in the material subjected to the test. No doubt more extended experiments would result, in some instances, in a reduction of the temperature given as the thermal death-point for a degree or more; but the results as stated are sufficiently accurate for all practical purposes, and permit us to draw some general conclusions: (*a*) the temperature required to destroy the vitality of pathogenic organisms varies for different organisms; (*b*) in the absence of spores, the limits of variation are about 10 degs. C. (18 degs. F.); (*c*) a temperature of 56 degs. C. (132·8 degs. F.) is fatal to the bacillus of anthrax, the bacillus of typhoid-fever, the bacillus of glanders, the spirillum of Asiatic cholera, the erysipelas coccus, to the virus of vaccinia , of rinderpest, of sheep-pox, and probably of several other infectious diseases; (*d*) a temperature of 56 degs. C. (132·8 degs. F.) is fatal to all of the pathogenic and non-pathogenic organisms tested, in the absence of spores (with the single exception of *sarcina lutea*, which, in one experiment, grew after exposure to this temperature); (*e*) a temperature of 100 degs. C. (212 degs. F.) maintained for five minutes destroys the spores of all pathogenic organisms tested: (*f*) it is probable that some of the bacilli which are destroyed by a temperature of 60 degs. C. form endogenous spores, which are also destroyed at this temperature.

The essentials of a good filter for domestic purposes are: 1. Efficiency in removing foreign bodies held in suspension. 2. Chemical power to destroy animal and vegetable impurities in solution, or to convert them into innocuous substances. 3. Freedom from all possibility of tainting the water. 4. Simplicity of construction, so as to admit of the filtering material being readily renewed. 5. Cheapness. A good filter for domestic purposes must possess all five of these qualities. Those that have two or three of them and lack the remainder do not practically solve the problem of giving us clean water to drink.

The Japanese use a porous sandstone hollowed in the shape of an egg, through which the water percolates into a receptacle underneath; the Egyptians resort to a similar device; the Spaniards use a porous earthen pot. But these and other similar contrivances cannot be thoroughly cleansed; after the most thorough rinsing, some impurities will remain in the pores of the stone. Spongy iron and carferal are open to the same objection; they will answer well for a short time, but soon become contaminated by pollution retained in their pores. Sponge, cloth, and felt, unless cleaned every day or two with hot water, will do more harm than good, and the average servant-girl will not clean them nor any other filter unless under the eye of her mistress.

The various forms of filters that are screwed to the faucet have only to be hastily examined to be discarded, as there is not sufficient filtering material in them to be of much utility, and they very soon become foul and offensive. Buck says, "There is no material known which can be introduced into the small space of a tap-filter and accomplish any real purification of the water which passes through at the ordinary rate of flow."

The various complicated closed filters, filled with any material which cannot be removed for cleansing, condemn themselves. No amount of pumping water through them at different angles which is at all likely to be used, can cleanse them of the impurities that adhere to the mass, and in the pores of the filtering material used. Parkes, in his "Manual of Practical Hygiene," says: "Filters, where the material is cemented up and cannot be removed, ought to be abandoned altogether."

The various metal filters in which the water comes in contact with metallic surfaces, either iron, lead, tinned iron, or zinc, are objectionable from their appreciable influence upon the water retained in them for any considerable time. Pure block-tin is the least objectionable of any of the metals.

The aim of most filters is to remove impurities from the water speedily—as rapidly as it escapes from the faucet. Experiment shows that effective filtration cannot be accomplished in this way, as the water does not remain long enough in contact with the filtering material used to become purified of much that might be removed by slow filtration or percolation through the same appliance. Of all the filtering materials mentioned, it seems to me that sand and charcoal are the two that accomplish the best results, and of these vegetable charcoal is the best.

Clean quartz sand will retard the passage of some impurities held in suspension, but no very careful investigation is necessary to demonstrate the presence of many impurities in water that has passed through it. The naked eye can detect them in most samples. Buck states, "The spores of algæ are not removed by the passage of water through sand," and he adds that "clean quartz sand can produce little effect" on polluted water. But he and many, if not all, other sanitarians assert that charcoal does purify the water and remove the odour of putrefaction. While there is no lack of authority to prove the value of animal charcoal as a filtering material, the claims of vegetable charcoal seem to me to make it more servicable. Vegetable charcoal is "the solid residuum of the destructive distillation of wood." It is insipid and inodorous, it is insoluble in water, it is but little affected by either acids or alkalies. The ash consists chiefly of carbonate of potash, silica, lime, and the oxide of iron. Vegetable charcoal has a strong deodorizing power. Water containing sulphureted hydrogen speedily loses its odour when filtered through it. The taste of liquids, when dependent on the presence of certain organic substances, is almost or entirely removed by filtering through it. "The purifying, antiseptic power of charcoal is due to the action of its absorbed oxygen upon organic matter." A careful authority says: "Charcoal, by possessing the properties of absorption, decomposition, and combination, is eminently fitted as a filter for the purification of water, removing from it the colour, odour, and taste of its impurities by oxidizing and recombining them into other and inoffensive substances." A reference to chemistry shows us that the following gases are absorbed by charcoal: Hydrogen, nitrogen, carbonic oxide, marsh-gas, nitrous oxide, carbonic acid, olefiant gas, sulphurous acid, air, sulphureted hydrogen, muriatic acid, hydrochloric acid, and ammonia.

Witthaus, in his "General Medical Chemistry," says on this subject: "Its (vegetable charcoal's) power of absorbing odorous bodies renders it valuable as a disinfecting and filtering agent, and in the prevention of putrefaction and fermentation of certain liquids. It is with this view that the interiors of barrels intended to hold wine, beer, or water, are carbonized. Certain odorous culinary operations are rendered inodorous by the introduction of a fragment of charcoal into the pot. The efficacy of charcoal as a filtering material is due in a great measure to the oxidizing action of the oxygen contained in its pores."

In the article on vegetable charcoal in the "National Dispensatory," the writer says: "The most fetid gases disengaged by putrefaction are among those which are the most abundantly absorbed by charcoal, viz., ammonia, sulphureted hydrogen, and sulphurous acid, and the oxygen contained in the charcoal combines with the other deleterious substances and generates new and inodorous compounds." Buck says, "All varieties of carbon formed by the destructive distillation of vegetable or animal matter possess the property of removing organic matter from solution." Fowne's "Chemistry" says of charcoal, "It is said to absorb ninety times its volume of ammoniacal gas." But sufficient authorities have been quoted to prove the high estimate in which vegetable charcoal is held as a filtering material by chemists and sanitarians. Careful experimenting with it has satisfied me of its efficacy and practicability. It is efficient, clean, easily obtained by anyone, and so cheap that after a few weeks' use it can be thrown away and a clean supply substituted, and the cost need not be taken into consideration. Animal charcoal possesses valuable filtering properties, but it is very expensive, difficult to be obtained, and is so associated in the minds of the people with dead horses and the bone-yard that a strong prejudice exists against it. I have thus tried to show in this paper—1. That clean drinking-water is essential to health. 2. Some of the well-established results of drinking polluted water. 3. The various filtering materials that have been used, with their merits and objections.

4. The superiority and availability of vegetable charcoal as a filtering material.

In conclusion, in answering the question, "How, then, may we obtain clean drinking-water?" I would answer, by filtering the water slowly through properly adjusted vegetable charcoal placed in an earthen receptacle of some kind, so that the water will not come in contact at any stage of its passage through the filter with metal of any kind. Cool the filtered water by placing ice under or around the vessel in which the water is contained, but do not put the ice into the water, or its impurities will be liberated by melting and contaminate it. Acting on these suggestions, I believe clean drinking-water may be obtained in any family, and, with clean water, less sickness.

Popular Science Papers

"Blessings on Science! When the Earth seemed old,
When Faith grew doting, and our reason cold,
'Twas she discovered that the world was young,
And taught a language to its lisping tongue."
—*Charles Mackay.*

"HARKING BACK" IN HEALTH AND DISEASE.

By T. W. Mills.

THIRD AND CONCLUDING PAPER.

In cases of valvular diseases with dilatation of the heart, or, indeed, any condition of this organ that permits of regurgitation with imperfectly aerated blood, we have similarly a reversion. It will be found that in not a few diseases of the heart—in the condition of that organ during fainting; after shocks which have temporarily suspended many functions of the nervous system, and in consequence greatly imperilled life—in all such cases it will be found that those parts of the heart the earliest developed in the history of the animal series are the very parts to continue their action latest. Now, this is at once fortunate for the mammal and of great significance, inasmuch as the latest investigations show in the clearest way that the action of the ventricles is dependent on the functional integrity of the sinus and auricles, especially of the sinus. Suppose that the reverse were the case, and the sinus (or great veins) and auricles were the first to cease pulsating: the beat of the ventricle would be of comparatively little use; but apart from this, what explanation can be given of this peculiar sequence in the mammal independently of derivation from lower forms, which makes all clear? If this doctrine of physiological reversion went no further than the circulatory system, it would throw a flood of light on the significance of otherwise obscure if not absolutely inexplicable phenomena. But it is to the nervous system that we must look for evidence which places the doctrine beyond cavil to a degree perhaps not equally clear in other parts of the economy.

When a quadruped is poisoned by curare, by which the nervous influences normally reaching the tissues and regulating heat-production (and, as I believe, nutrition) are wholly or partially cut off, the mammal becomes virtually a cold-blooded animal. Its temperature rises and falls with that of the ambient air. This is one clear example of physiological reversion experimentally produced. It is, however, only one of many that might be instanced. It is well known, and can be shown in the simplest manner, that when the head of a frog is removed, reflex action is more readily excited; the same applies to the removal of the cerebral lobes of the mammal. As Goltz has pointed out, one of the most remarkable results following removal of large portions of the brain-lobes in the dogs which this experimenter kept under observation, is, as I can myself testify, the increase of reflex action. The animal becomes a sort of machine, which one may manipulate at will. A similar result follows in man when the higher centres of the cerebrum are rendered functionally inactive by disease or injury.

Now, in all these cases the animal loses its own peculiar character, and sinks to the level of some form lower in the scale. All will agree that the higher forms of true automatic (spontaneous) action in the physiological sense are dependent on the existence of the cerebrum. It follows, therefore, that the lower we pass in the scale of life, the more machine-like animals become.

Pathological reversion is most plainly illustrated by the results of hæmorrhage into the cerebrum. Dr. Hughlings-Jackson has so well described the order and relation of the various events, that I shall here quote his own words in describing lesions of the cerebrum (*corpus striatum*) from hæmorrhage:—

"It will be found that those parts suffer most and suffer longest which have the more voluntary uses. This is notorious of the arm and leg: the arm nearly always suffers more, and recovers later, than the leg. Of course, the distinction into complete and incomplete hæmiplegia is artificial. There are all degrees of paralysis, according to degrees of gravity of the lesion. But there is an order in which paralysis increases in increasing gravity of lesions. We observe that the graver the lesion, not only are the more voluntary parts (arm and leg) *more* paralyzed, but that the further spread in *range* is the paralysis, and the method of its spreading is from the more voluntary to the more automatic parts. Thus, neglecting very small clots, a considerable lesion paralyzes only the most voluntary movements of one side of the body, those of the face, arm, and leg, and these parts in degree according to their degree of voluntary use. A larger lesion not only causes a deeper and more permanent palsy of these three parts, but it leads also to implication of more automatic parts. In still larger lesions the palsy spreads to the *most* automatic parts of the body, even to parts supplied by ganglionic nerves. It produces stertor from palsy of the palate and palsy of the respiratory muscles and of the heart—the palsy of respiration and of the heart showing itself chiefly in *slowness* of movement. There is also abasement of temperature."—"Reynolds's System of Medicine," vol. i.

I have intentionally quoted the exact words of this eminent investigator of the abnormalities of the nervous system constituting disease, so that their interpretation alone may rest with me.

It being granted that the lower we pass in the scale of animal life the more machine-like or automatic does the organism become, it will be clear that, taking the various degrees or grades of paralysis as described above, we have likewise degrees of resemblance to lower forms; *i.e.*, the graver the paralysis, the lower in the scale must we seek to find an animal comparable to man in this condition. The slowing of the heart and the lowering of the temperature are both modes of approach to the normal functional condition in cold-blooded animals.

When we add to this, or take by itself, paralysis of the muscles of the face, by which the expression peculiar to man is lost, we have a condition plainly like that in lower mammals, and, in extreme cases, even like that of

the lower vertebrates, in which facial expression as determined by muscular action is minimal.

It must be conceded that the uneducated deaf-mute is in a condition mentally much nearer that of the higher mammals than is his uneducated fellow-man in possession of all his senses. But in aphasia, the result of disease or shock, there is in man plainly a marked reversion to a condition mentally resembling that in the "dumb-brutes" about him.

In the case of the idiot we have an example of man in many respects inferior to the higher mammals.

But it is not my intention to treat the subject of psychological reversion in this paper. The subject is at once large, tempting, and, to my mind, furnishes evidence the most conclusive for the doctrine of descent with modification from lower forms as an explanation of man's nature.

One naturally looks about for an explanation of such remarkable facts as the order of muscular failure or paralysis as indicated in the paragraph quoted above. The entire brain may be separated from the medulla in a rabbit, and respiration still continue. The lower we descend in the animal scale, the more do we find the brain reduced to a mere repository for mechanisms adapted to regulate those processes constituting the so-called vegetative functions; but the question again and again recurs, "Why in mammals, why in man, should the functions first to fail be those peculiar to them or to him, and not the reverse?"

The longer even in the lifetime of a single individual a certain form of muscular action has been practised, the less attention is required for its performance, the less voluntary, the more automatic it becomes. But would the duration of man's existence on this planet suffice to explain, on any system of gradual progression or functional improvement, the wonderful automatic action of all of those mechanisms essential to the maintenance of life?

The doctrine of descent renders the whole plain enough; and unless we adopt the view that man appeared suddenly and independently upon the scene, fully equipped for the battle of life, it seems but rational to assume that with all his departures, both by way of progress and retrogression, his functions are what they are by reason of such relationship as we are indicating. The morphologists have done much to account for the affinities of form or structure in the animal series: it remains for the physiologists to do their part in showing how the functions of the higher animals are related to the functions of the lower.

But once accepting this position, it is possible to explain phenomena following experiments on animals, and growing out of the experiments disease is producing, or, as I would prefer to say, the phenomena which are the deviations from the normal that constitute disease. Disease is no entity in itself, though we often use language which might lead to the belief that we so conceived of it.

When the normal adaptations to environment on which the very existence of an animal depends are disturbed, what more natural than that there should be a return to a functional condition prevalent in some ancestral group, or common to a host of such groups, as the case may be?—*Science*.

ERYSIPELAS.—Dr. Duckworth (*Practitioner*) states that a favourite prescription at St. Bartholomew's Hospital for erysipelas is equal parts of precipitated chalk with melted benzoated or purified lard, with the addition of half a drachm of carbolic acid to every ounce of the ointment.

SENSATION OF WARMTH PRODUCED BY CARBONIC ACID GAS.

AT a recent meeting of the Physiological Society, Berlin, Dr. Goldschneider spoke on the fact, which has been known for a long time, that when carbonic acid gas is allowed to come in contact with the skin, it produces a greater sensation of warmth than air of the same temperature. He has carried out a prolonged series of experiments to determine the cause of this increased sensation of heat. He examined first the purely physical factors which might have some influence on the observed facts—namely, the moistness, specific heat, and heat absorption by the gases.

When he compared the sensation of heat produced by moist air with that produced by dry air he found that the former always seemed the greater. The difference between the two might be as much as 5 degs. C. to 6 degs. C. when the air was at a higher temperature than that of the skin. Thus, air at 35 degs. C. whose saturation with moisture was 80, produced the same sensation of heat as air at 41 degs C. whose saturation was only 30. When experimenting with carbonic acid gas, he found that a difference of 40 in the saturation produced a difference in the resulting sensation of heat corresponding to 2 degs. or 3 degs. of temperature.

But even when equally moist or dry air and carbonic acid gas were allowed to act on the skin, the sensation of heat produced by the latter was always the greater. It does not seem possible to explain the greater sensation of heat with carbonic acid gas by reference to the extremely small differences of specific heat of air and this gas, still less by reference to their somewhat greater co-efficients of heat absorption. He also investigated the effect of the more ready absorption of carbonic acid gas by fluids, by removing the epidermis with a blister on a circumscribed portion of the skin, and allowing the gas to act upon this place. The carbonic acid gas was speedily absorbed by the lymph, but it still produced a sensation of greater heat even when all moisture was removed from the surface exposed by the blister. He hence considers that the purely physical properties of the gas will not suffice to explain its remarkable influence on the sensory nerves for heat.

Dr. Goldschneider next investigated the physiological factors which might suffice to explain the observed phenomenon. He proved that there is no recognizable objective rise of temperature under the influence of the carbonic acid gas. It is true that he observed now and again a distinct dilatation of the blood vessels, but this was by no means constant, and not sufficient to account for the increased sensation of heat. He proved that the carbonic acid gas has a direct effect upon the sensory nerves; but in contrast to the results of others, who attribute an anæsthetic action to this gas, he observed that at first it produces a hyperæsthesia of those nerves specially connected with the production of heat sensations, and then this makes way for an anæsthesia. The nerves connected with heat sensations were more strongly stimulated than those connected with sensations of cold.

The speaker summed up the results of his extremely numerous experiments by urging that in addition to the greater absorption of heat by the carbonic acid gas and its power of producing hyperæmia of the skin, its action is to be explained chiefly by its direct chemical action on the endings of the nerves concerned in the production of sensations of heat. This, therefore, is to be regarded as the cause of the observed phenomenon, that when carbonic acid gas is brought into contact with the skin, it produces a greater sensation of heat than does the contact of equally warm and equally dry air.

Our Bookshelf

"Reading maketh a full man."—*Bacon.*

THE SAVING OF LIFE.

The Romance of Life-Preservation. By JAMES BURNLEY. (London: W. H. Allen & Co. 1888.)

THIS is a large and well-printed volume which, in our opinion, should become deservedly popular as a gift book to young people, and as an interesting volume for older folks as well. It deals in a very complete fashion with the varied agencies through which mankind have been enabled to save life from the perils of land and sea—including the dangers of disease and pain. The author divides his books into five parts, treating respectively of perils at sea, natural visitations, travel and industry, strife and war, and hygiene and medicine. Throughout his pages he contrives to impart a real interest to the topics he discusses, and the result is the production of an eminently readable volume, full of details which are all the more fascinating because they are true.

A volume like that before us may be described as possessing a high educative value. In the hands of an intelligent boy or girl, for instance, this work may form a text book of historical progress, and of the rise and advance of the resources of civilized life. There is no more wonderful story in truth than that which relates the marvellous growth of human expedients within the last half century in the way of locomotion, in life-saving, and even in the arts of war. Page by page, Mr. Burnley's book opens out before us this wonderful history, and places the evidences of progress in attractive array. We have been specially pleased with his treatment of the medical phases of his subject.

The story of chloroform discovery, and of other means of abolishing consciousness and saving pain, will be perused with interest, as, also, will his chapter on "Some Curiosities of Surgery." We observe a misprint in p. 435, where the name "Toynbie" is given for "Toynbee." To this chapter, in a future edition of his book, Mr. Burnley should add the details of successful operations on the brain for the removal of tumours—feats which certainly claim to rank as veritable triumphs as well as curiosities of the surgeon's art. The book is an excellent one, and it is all the more to be commended because its pages are largely recitals of what man's heroism and unselfishness have accomplished in the work of saving life.

MASSAGE.

La Pratique du Massage. Par W. MURRELL. Avec une Introduction par le DR. DUJARDIN-BEAUMETZ. (Paris: Librarie, J. B. Balliere et Fils. 1888.)

THIS is a reproduction in French of Dr. Murrell's well-known volume on Massage, a work which has been duly reviewed in our pages on its successive appearances in its English Editions. The translator has performed his work admirably, and the appearance of the book in its Continental dress is at once a testimony to Dr. Murrell's eminence as an authority on this branch of therapeutics, and to the enterprise of our French neighbours in availing themselves of a standard English book on the subject.

Harper's Magazine for April contains, among other interesting papers, a notable article on "Acting and Actors," by M. Coquelin, and a story, "Ananias," by J. C. Harris. Mr. Anstey describes "The Humours of a Minor Theatre," and Mr. Barnard's sketches in illustration thereof are most amusing.

The Season for April is fully abreast of the times as a magazine of fashion for ladies. Its illustrations are most artistically designed.

Sanitary Appliances, Etc.

MESSRS. A. & R. SCOTT'S "TEACO."

THIS is a pure cocoa essence, manufactured by Messrs. A. & R. Scott, the makers of the celebrated "Midlothian Oat Flour." From an examination of this product, we are enabled to certify the purity of "Teaco," the preparation being free from added sugar or other extraneous substances. "Teaco" is used by adding a little sugar to a teaspoonful of the substance, and by making these ingredients into a paste; the cup being then filled up with boiling water, and milk or cream added to taste. A chocolate may be made simply by increasing the quantity of "Teaco" used to each cupful of water. The beverage thus made is of pleasant flavour, and from the absence of excess of fatty matters is likely to prove acceptable to invalids and to persons of delicate digestion. We can thoroughly recommend this latest preparation of Messrs. A. & R. Scott as an acceptable addition to the list of concentrated foods.

LANOLINE SOAP.—This is a new soap brought out by Messrs. Burroughs, Wellcome & Co., of Snow Hill-buildings, E.C., which seems likely to become extremely popular as soon as its special properties and advantages have become more generally known. Lanoline soap, as we now see it, is a distinct improvement upon some of the earlier attempts at producing such an article, inasmuch as it is cream-white in colour, and even the "unscented" kind is free from all odour of a disagreeable nature. It forms a quick, smooth, and persistent lather or "foam," with either hot or cold water, and even when the latter is of a "hard" or "chalky" variety, there is none—or but little—of the curdy coagulum often formed with other soaps. Devoid of the great excess of caustic alkali, which many soaps contain, it is not liable to irritate even the most delicate skin, and for the same reason it ought to be popular with the fair sex, as calculated to improve the complexion. For medical and surgical use this lanoline soap is eminently well suited, since the cholesterin it contains imparts to it a very considerable degree of penetrative power, and we understand that in practice this soap offers a very convenient vehicle through which a variety of medicinal substances can be applied to the skin with great effect in cases of eczema, and many other cutaneous affections. Several disinfectant and deodorant preparations, such, for instance, as carbolic acid, eucalyptus oil, iodoform, &c., can be effectively applied to diseased epithelial surfaces in this way. All persons with an irritable epidermis, at least those who shave habitually, will be glad to hear that this novel saponaceous preparation makes a particularly soft shaving soap, readily forming a creamy foam, which greatly facilitates the operation in question. It is also a fact that we know of nothing so eminently adapted for shampooing purposes as this lanoline soap. It is put up in boxes of three tablets each, and, as it keeps well, it may be safely stocked without fear of deterioration.

"ELECTRICITY IS LIFE."
(TRADE MARK.)

PULVERMACHER'S

WORLD-FAMED

GALVANIC BELTS,

FOR the CURE of NERVOUS DISEASES.

HAVE RECEIVED TESTIMONIALS from

THREE PHYSICIANS to

HER MAJESTY the QUEEN,

THE ACADÉMIE DE MÉDECINE of Paris and

FORTY MEMBERS of the

ROYAL COLLEGE of PHYSICIANS of LONDON.

RECENT TESTIMONIALS.

GALVANISM *v.* NERVOUS EXHAUSTION.

Oxford, March 6, 1888.

Dear Sir,—I am very pleased to tell you that since wearing your Galvanic Belt I am enjoying better health, and am stronger and brighter than I have been for years.

I feel myself now quite restored, and will recommend your treatment to any person who may be suffering in the same manner.

Yours very gratefully, A. BATE.

Mr. J. L. Pulvermacher, 194, Regent-street, W.

GALVANISM *v.* RELAXED THROAT.

Hurst, Ashton-under-Lyne, 5th March, 1888.

Dear Sir,—I wish to inform you that your Galvanic Chain Band has removed the pain from my throat, after being in punishment for one year and nine months, through my throat being relaxed.—Ever yours thankfully, A. KNOTT.

Mr. J. L. Pulvermacher, 194, Regent-street, W.

GALVANISM *v.* PARALYSIS.

King's Road, Honiton, 4th March, 1888.

Sir,—I am glad to inform you that the boy for whose use you supplied your Combined Band has quite regained his walking power, and much more quickly than was to be expected.—Yours obediently, W. COLEMAN.

Mr. J. L. Pulvermacher, 194, Regent-street, W.

GALVANISM *v.* INDIGESTION and SICK HEADACHE.

Chelmsford, Essex, March 3rd, 1888.

Dear Sir,—It gives me great pleasure to state that I have quite regained my health, and am now quite free from those wretched sick headaches which I had continually for the space of three years before I tried your Galvanic Belt.

I am now able to eat anything without suffering with my head, and I am very thankful for the benefit I have derived from your treatment.

Should you refer any one to me, I shall only be too pleased to give them my experience.—Yours truly, G. BEACH.

Mr. J. L. Pulvermacher, 194, Regent-street, W.

GALVANISM *v.* NERVOUS WEAKNESS and DEPRESSION.

Langley, Macclesfield, 2nd March, 1888.

Dear Sir,—The Galvanic Belt which I had from you for a young lady has effected a complete cure; the patient was suffering from nervous depression and weakness.

This is the fourth case I have recommended to try your appliances, and every one has been equally successful.—I am, yours truly, W. WHISTON.

Messrs. J. L. Pulvermacher & Co., 194, Regent-street, W.

GALVANISM *v.* RHEUMATISM.

5, East-crescent, St. Leonards, 14th February, 1888.

Dear Sirs,—It is due to you to say that my shoulder now appears quite well, after having worn your Galvanic Chain Band for rheumatism.

For six years previously I had much pain, and no liniments removed it. Yours faithfully, F. B. ASHLEY.

Messrs. J. L. Pulvermacher & Co., 194, Regent-street, W.

GALVANISM *v.* INDIGESTION and NERVOUS EXHAUSTION.

Oxford, 12th February, 1888.

Dear Sir,—I am writing to tell you of the immense relief your Belts have given me. My indigestion has vanished, and before I wore your Belt I always had to be careful what I ate, but now I do not give it a thought.

By my feelings of lively activity I feel certain that I am entirely cured, as the nervous exhaustion has disappeared, and I feel in my body that I am quite free from that complaint—Yours thankfully, F. HARRISON.

Mr. Pulvermacher, 194, Regent-street, W.

GALVANISM *v.* NERVOUS EXHAUSTION.

The distressing symptoms of Nervous Exhaustion and Debility are speedily removed by means of PULVERMACHER'S world-famed GALVANIC BELTS, which are so arranged as to convey a powerful electric current direct to the affected parts, gradually stimulating and strengthening all the nerves and muscles, and speedily arresting all symptoms of waste and decay.

ADVICE PERSONALLY or by LETTER, free of charge.

FOR FURTHER TESTIMONIALS, both Medical and Private, see new Pamphlet, "GALVANISM: NATURE'S CHIEF RESTORER OF IMPAIRED VITAL ENERGY," post free on application to

J. L. PULVERMACHER AND CO.,
GALVANIC ESTABLISHMENT,
194, REGENT-STREET, LONDON, W. (nearly opposite Conduit-street).

IMPORTANT ANNOUNCEMENT.

COMMENCEMENT OF A NEW VOLUME OF "HEALTH."

HEALTH, as our readers are aware, may be obtained of all Booksellers and Newsagents, and at the Railway Bookstalls, on the day of publication. It may also be ordered from the PUBLISHER, 2, Paternoster-square, London, E.C., who will send the journal, post free, for a year, on receipt of postal orders for 10s. 10d.

As many of our readers who live in remote districts prefer to obtain HEALTH from the Publisher direct, and as we are desirous of increasing the already large number of subscribers who give us a yearly order for the journal, we take the opportunity afforded by the COMMENCEMENT OF A NEW VOLUME to offer the following FREE GIFTS and BONUSES to all who subscribe to HEALTH for one year or longer, on and after FRIDAY, APRIL 6TH, when the first number of Volume XI. will be issued:—

(1.) To each Subscriber who remits 10s. 10d. to the Publisher, entitling him (or her) to receive one copy of HEALTH, post free, for one year, we shall present a copy of Dr. Andrew Wilson's work, entitled "A Manual of Health Science" (Longmans & Co.), value 2s. 6d.

(2.) To each subscriber who remits 21s. 8d., entitling him or her to receive two copies of HEALTH weekly, post free, for one year (or one copy for two years), we will present Dr. Richardson's "Ministry of Health" (Chatto & Windus), value 6s. The copies of HEALTH so ordered may be posted to separate addresses.

(3.) To each person who subscribes 32s. 6d., for three copies of HEALTH, post free, weekly, for one year, we will present the volume by Dr. Richardson mentioned above, and also the handsome, illustrated book entitled, "Studies in Life and Sense," by Dr. Andrew Wilson (Chatto & Windus), value 6s.—being a free gift of the total value of 12s.

The bonus last mentioned will also be presented to anyone who succeeds in obtaining three yearly subscribers to HEALTH, and who remits to the Publisher the sum of 32s. 6d., together with the names and addresses of the persons to whom the copies are to be posted each week.

As the literary gifts above-mentioned constitute books containing solid and reliable information regarding health and other matters of popular scientific interest, it will be seen that the above scheme, while intended to increase our already large circulation, also offers distinct advantages to new subscribers who guarantee by their subscriptions a year's support to this journal. All communications regarding subscriptions and other purely business details connected with HEALTH should be addressed directly to the PUBLISHER, 2, Paternoster-square, London, E.C., and *not to the Editor*.

Our Letter-Box

"Conference [maketh] a ready man."—*Bacon.*

NOTICES TO CORRESPONDENTS.

All Communications for the Editorial Department (including Books for Review, Specimens of Sanitary Appliances, &c.), to be addressed to "THE EDITOR OF HEALTH," 2, PATERNOSTER-SQUARE, LONDON, E.C. *Those intended for the Publishing Office to be sent to* MR. A. P. WATT, THE PUBLISHER, *at the same address.*

RULES FOR CORRESPONDENTS.

OWING to the mass of letters which reaches us each week, we respectfully direct the attention of Correspondents, desiring replies in the LETTER-BOX DEPARTMENT of HEALTH, to the following rules:—

1. All questions are answered free of charge in the columns of HEALTH.
2. All letters must be legibly addressed to "The Editor of HEALTH, 2, Paternoster-square, London, E.C.," *and to no other address.*
3. Questions to which answers are desired by post, are so replied to solely at the Editor's discretion. If no answer is sent by post, the query will be replied to in the "Letter-Box" columns of HEALTH. A stamped addressed envelope must accompany all queries to which a private reply is desired.
4. Addresses of physicians and surgeons will, as heretofore, be forwarded FREE to Correspondents on their enclosing a stamped addressed envelope for reply.
5. Correspondents are requested to write on one side of the paper only, and to make their inquiries as brief as may be consistent with clearness.
6. From the necessity of sending HEALTH to press early in the week, no Correspondent can be replied to in the "Letter-Box" columns in the same week in which the inquiry is received. Replies crushed out of any issue will be found in the succeeding number.
7. No Post Cards must be used in sending queries. Violation of this rule deprives the sender of the privilege of a reply.

QUERIES AND ANSWERS.

REPLIES: GENERAL, SANITARY, AND MEDICAL.

[Readers of HEALTH will kindly note that when back numbers of the journal are desired, the letters containing such requests and stamps for the numbers should be addressed to the PUBLISHER of HEALTH, 2, Paternoster-square, London, E.C., and *not to the Editor.*]

STAFF.—You should try the plan of inhaling through the nostrils at night the vapour of hot water to which a little of Stern's Pumiline has been added. For full description of this preparation see article in HEALTH, No. 252. You might benefit greatly from a change of air for a week or two at the sea side.

SOMMEIL.—Nothing but habit will accustom you to the practice of breathing as you wish. It is probable that your digestion and not your breathing is at fault. Avoid late suppers, and before going to bed, drink a tumbler of hot water. The inhalation above recommended to "Staff" might also assist you.

HEALTH READER.—If you put yourself so persistently in the way of infection you must expect to reap unpleasant consequences. Sponge the affected parts with cold or tepid water (to which a little Hazeline has been added) night and morning, and wear a suspensory bandage for some time.

J. RS.—Touch the wart with a little of the tincture of perchloride of iron, morning and night, and see that you wash the parts regularly night and morning as a matter of ordinary cleanliness.

JOHN COLLIE.—Get into the habit of sitting and sleeping with your feet elevated slightly (on a rest by day and on a pillow in bed) so as to favour the return of the blood upwards in the veins. Then look rigidly to your digestion, and avoid constipation especially by the use of Dahl's Cakes, according to the diet hints given to "An Appreciative Subscriber" in last week's issue. You must also wear a properly fitted elastic stocking. Apply to Messrs. Lindsey & Co., 32, Ludgate-hill, London, E.C. If these measures do not relieve you, write again.

TOES.—The only remedy would be a boot properly constructed with a division inside so as to keep the toes in position. Such a boot might be designed for you by Messrs. Dowie & Marshall, Strand, London, W.C.

PEEBLES.—Allow one of Burroughs, Wellcome & Co.'s chlorate of potash tabloids with cocaine to dissolve in your mouth occasionally, and before speaking especially. This is a simple and effective remedy. The Soden Mineral Pastilles are also very excellent lozenges for such throat troubles. You should strengthen your system also by taking a little of Thomson's Cod Oil Cream (Dublin-street, Edinburgh) after your meals twice daily.

COMP.—The only satisfactory way of relieving your fears is for you to consult a competent physician, and have your chest thoroughly examined. There is no possibility of telling whether or not you have heart-disease save by the examination of your chest. The probability is that your digestion is at fault, as you were informed by the surgeon you consulted. Rest after your meals and avoid late suppers as necessary rules for health. We can send you a physician's address on receipt of stamped addressed envelope.

HOPETOUN.—We cannot advise you to try the ear-appliances you name. If there is any need for such appliances you should, in the first case, consult an ear-surgeon regarding the advisability of using them.

PRESTO.—Howie's Filter (Hurlford, Kilmarnock, N.B.) is that we recommend. Give it a trial. It is simple and effective.

PORTIA.— 1. Not so many certainly as you name: probably about 240. 2. Vin Mariani (Roberts & Co., New Bond-street, London, W.). 3. Bayley's Teeth Preparations (17, Cockspur-street, Pall-Mall, London, S.W.).

A. B. B.—There is no such method of cure practised in modern surgery.

J. ARTHUR.—Dr. Pierre's teeth preparations (39A, Bond-street, London, W.) should be used by you. They will arrest the decay you name.

ÆRONAUT.—Have nothing to do with such a mode of treatment. Read the articles published in HEALTH on "How to Get Thin or Fat" (to be had from the Publisher) and peruse also Ebstein's book on the treatment of corpulence. For review and full notice of this work, see HEALTH, No. 59.

PARALYSED.—[Your letter was erroneously addressed to the Publisher of HEALTH. Kindly read our rules for correspondents.] Apply to Dr. Stretch Dowse, 14, Welbeck-street, Cavendish-square, London, W., or to the Secretary, General Nursing Institute, 5, Henrietta-street, Covent-garden, London, W.C., for the information you desire.

TOKAR.—Certainly; have the growth removed, as on the previous occasion. There is no other means of cure.

"A FRIEND OF MINE."

TRAVELLERS who have gone "far countries for to see" say that they find human nature pretty much the same all the world over. They find wide variance in colour of skin, in physical contour, in mental characteristics, but in the essential elements that control social conduct, the human family is a brotherhood.

The law, unwritten, found in no statute book, enforced by no court decrees, but having an influence circumscribed only by the limits of earthly space, is the law of kindness.

Among peoples where cruelty to human kind is almost a fixed habit, who are relentless foes, and as friends scarcely less to be dreaded, whose savage natures revel in fiendish atrocities, there yet lingers the spark of divinity which lifts man above the beasts.

Sorrow melts the human heart wherever found, and sympathy mingles its tears with grief all the world over. Where pity does not dwell, there lives no thing of human kind. It is "the touch of nature that makes the whole world kin."

What a terrible world this would be to live in were it not for the sympathy and loving-kindness shown us when sorrow comes, for it is decreed that in all lives "some days must be dark and dreary."

The thousands of voluntary testimonials which the proprietors of Warner's SAFE Cure have received in regard to the efficacy of that remedy, reveal this "touch of nature" in a peculiar manner. The great majority of them acknowledge that it was through some kind friend who, in pity for their sufferings, had made known to them the wonderful merits of this great remedy.

The testimonial of Mr. William H. Pearce, of 45, St. Anne-street, Liverpool, is a fair sample. For months he was greatly troubled with terrible pains in the small of his back, and was constantly obliged to rest from his duties. He had no appetite, food being obnoxious to him, and his mouth in the morning tasted greasy, and his tongue was thickly coated. He consulted his medical man, who informed him that he was suffering from kidney disease. He made use of the doctor's prescriptions, but did not improve. "At last," he says, "a friend advised me to try Warner's SAFE Cure, which I did, and continued taking it regularly, according to directions, for some three months, with the result that to-day I am a perfectly cured man, and have none of the distressing symptoms from which I previously suffered."

How many men there are to-day in the world, rounding out lives of usefulness, making the world happier and better, who would have long since passed to the other shore, had it not been for the loving-kindness of friends shown in the practical way mentioned by Mr. Pearce.

This great remedy, of whose merits people from all quarters of the globe bear willing testimony, is for sale by all chemists, at 4s. 6d. per bottle, or can be had direct of H. H. WARNER & Co., 86, Clerkenwell-road, London, E.C.

OMEGA.—Try Scott's Pure Cod Oil Emulsion. Thomson's Cod Oil Cream (Dublin-street, Edinburgh) is also an excellent preparation. Jensen's Cod Liver Oil is also a pure preparation, and has been highly recommended. It is not at all too late for you to try the oil.

B. B.—Pale coloured certainly, but liable to many variations. Read the pamphlet, "A Lecture to Young Men" (post free for 1s. 1d., from Mr. Renshaw, 356, Strand, London, W.C.), and follow out the directions given therein regarding diet. In particular, avoid sleeping on your back, and use a hard mattress only, and see that your bedroom is well ventilated.

NEWHAVEN.—Need cause you no anxiety. What you name is perfectly natural to many persons, and is no impediment to the step you mention.

C. P. P.—Use Dr. Pierre's Eau Dentifrice as a mouth-wash and his Tooth Powder (see advertisement in our pages) as a tooth-cleanser. Use a moderately hard brush only and tepid water. Brush the teeth night and morning.

J. Y. D. — Look to the quality of the water you drink first of all, and if it is in any way suspicious, use a Howie's filter (Hurlford, Kilmarnock, N.B.), and drink filtered water only. Exercise care in your diet, and avoid excess of vegetables for a time at least, but take strong soups, Brand's Beef Essence, and a liberal dietary at large. For the relief of your ailment, try also the following:—Dilute sulphuric acid, two and a half drachms; tincture of opium, one drachm; spirit of chloroform, two drachms; peppermint water to make up six ounces. Take a tablespoonful after each attack of the ailment. If not cured, write again, giving fuller particulars of food, habits, &c.

C. R. LINDSEY. — Apply to Messrs. Lindsey & Co., 32, Ludgate-hill, E.C., or to Krohne & Sesemann, Duke-street, Manchester-square, W. We have no confidence in the ear appliances you name. If such things are required, you had better take the advice of an aural surgeon first of all.

HEALTH.—See advice given to "Polly M." in the last number of HEALTH.

G. MANSON.—Read the pamphlet "A Lecture to Young Men" (post free, for 1s. 1d., from Mr. Renshaw, 356, Strand, London, W.C.), and note the directions as to diet, &c., it contains. You were very foolish to mix the tonics in the way you describe.

F. MCL——.—We do not think you need fear to undertake the voyage. Take with you a supply of Dahl's Cakes (advertised in our pages) as a remedy against constipation, and also Lamplough's Pyretic Saline, and for the rest be careful of your diet. If the ailment is painful at any time, bathe the parts with Hazeline pure, or diluted with water.

C. PACKMAN.—Use the "Sanitas" preparations. They are the best. For your case the Fluid and Powder are well adapted.

M. B. F.—Dr. Pierre's Eau Dentifrice and his Tooth Powder should be regularly used by you for the teeth, night and morning.

ALBERT R.—If you have not tried the following, do so:—Chrysophanic acid, one drachm; lard, one ounce. Label:—A piece the size of a pea to be rubbed into each patch of the skin-disease, once daily.

XEXO.—When the itching is present, apply a little of the following lotion to the parts twice and thrice daily, after bathing with tepid water, in which a little bicarbonate of soda has been dissolved:—Borax, two drachms; hydrochlorate of morphia, five grains; glycerine, half an ounce; rose water, four ounces. Mix. Label: "For outward use only."

A PORTER.—If the boils continue, take as much of the following mixture as will lie on a sixpence, thrice daily, between meals:—Sulphide of lime, twenty grains; sugar of milk, half an ounce. Mix. Label as above directed.

BRUMMAGEM.—Change your diet-habits; and attend to the following rules:—Avoid tea and coffee, and take Scott's Oat Flour to breakfast and supper; this, with twenty drops of Cascara Cordial, taken in water once or twice daily, an hour before food, will probably relieve you greatly. Avoid solid flesh-food, and take your meat mostly in the form of strong soups, for making which use Brand's Beef Essence. White boiled fish, stewed fruits, milk puddings, &c., may also be tried.

FOLLY.—Read the pamphlet, "A Lecture to Young Men" (post free for 1s. 1d., from Mr. Renshaw, Medical Publisher, 356, Strand, London, W.C.), and follow out the instructions it will afford you on the subject of your health.

AN EX-CONSUL'S STORY.

From "The Brooklyn Eagle."

A late United States Consul at one of the English ports, who is now a private resident of New York, relates the following interesting story:—

"On my last voyage home from England, some three years ago, in one of the Cunard steamers, I noticed one morning, after a few days out of port, a young man hobbling about on the upper deck, supported by crutches, and seeming to move with extreme difficulty and no little pain. He was well dressed and of exceedingly handsome countenance, but his limbs were somewhat emaciated, and his face very sallow and bore the traces of long suffering. As he seemed to have no attendant or companion, he at once attracted my sympathies, and I went up to him as he leaned against the taffrail looking out on the foaming track which the steamer was making. 'Excuse me, my young friend,' I said, touching him gently on the shoulder, 'you appear to be an invalid, and hardly able or strong enough to trust yourself unattended on an ocean voyage; but if you require any assistance, I am a robust and healthy man, and shall be glad to help you.' 'You are very kind,' he replied, in a weak voice, 'but I require no present aid beyond my crutches, which enable me to pass from my state-room up here to get the benefit of the sunshine and the sea-breeze.' 'You have been a great sufferer, no doubt,' I said, 'and I judge that you have been afflicted with that troublesome disease — rheumatism, whose prevalence and intensity seem to be on an alarming increase both in England and America.' 'You are right,' he answered; 'I have been its victim for more than a year, and after failing to find relief from medical skill, have lately tried the springs of Carlsbad and Vichy: but they have done me no good, and I am now on my return home to Missouri to die, I suppose. I shall be content if life is spared me to reach my mother's presence. She is a widow, and I am her only child.' There was a pathos in this speech which affected me profoundly, and awakened in me a deeper sympathy than I had felt before. I had no words to answer him, and stood silently beside him watching the snowy wake of the ship. While thus standing, my thoughts reverted to a child—a ten-year-old boy—of a neighbour of mine, residing near my consulate residence, who had been cured of a stubborn case of rheumatism by the use of St. Jacobs Oil, and I remembered that the steward of the ship had told me the day before that he had cured himself of a very severe attack of the gout, in New York, just before his last voyage, by the use of the same remedy. I at once left my young friend and went below to find the steward. I not only found him off duty, but discovered that he had a bottle of the Oil in his locker, which he had carried across the ocean in case of another attack. He readily parted with it on my representation, and, hurrying up again, I soon persuaded the young man to allow me to take him to his berth and apply the remedy. After doing so, I covered him up snugly in bed, and requested him not to get up until I should see him again. That evening I returned to his state-room, and found him sleeping peacefully and breathing gently. I roused him, and inquired how he felt. 'Like a new man,' he answered, with a grateful smile. 'I feel no pain, and am able to stretch my limbs without difficulty. I think I'll get up.' 'No, don't get up to-night,' I said, 'but let me rub you again with the Oil, and in the morning you will be much better able to go above.' 'All right,' he said, laughing. I then applied the Oil, again rubbing his knees, ankles, and arms thoroughly, until he said he felt as if he had a mustard poultice all over his body. I then left him. The next morning when I went up on deck for a breezy promenade, according to my custom, I found my patient waiting for me with a smiling face, *and without his crutches*, although he limped in his movements, but without pain. I don't think I ever felt so happy in my life. To make a long story short, I attended him closely during the rest of our voyage—some four days—applying the Oil every night, and guarding him against too much exposure to the fresh and damp spring breezes; and on landing at New York he was able, without assistance, to mount the hotel omnibus and go to the Astor House. I called on him two days later, and found him actually engaged in packing his trunk, preparatory to starting West, for his home, that evening. With a bright and grateful smile he welcomed me, and pointing to a little box carefully done up in thick brown paper, which stood upon the table, he said: 'My good friend, can you guess what that is?' 'A present for your sweetheart,' I answered. 'No,' he laughed, 'that is a dozen bottles of St. Jacobs Oil, which I have just purchased from Hudnut, the druggist across the way, and I am taking them home to show my good mother what has saved her son's life and restored him to her in health. And with it, I would like to carry you along also, to show her the face of him, without whom I should probably never have tried it. If you should ever visit the little village of Sedalia, in Missouri, Charlie Townsend and his mother will welcome you to their little home with hearts full of gratitude, and they will show you a bottle of St. Jacobs Oil enshrined in a silver and gold casket, which we shall keep as a parlour ornament as well as a memento of our meeting on the Cunard steamer. We parted after an hour's pleasant chat with mutual good-will and esteem, and a few weeks afterwards I received a letter from him telling me he was in perfect health, and containing many grateful expressions of his affectionate regards."—[2308]

M. A.—Articles on the topic you name are under consideration.

F. TAIT.—The Cremation Society has a crematorium in full working order at St. John's, Woking, London. We have always advocated cremation as the only satisfactory manner of disposing of the dead.

NIP.—"Aspiration," in ventilation, is the action of the winds in "drawing out" air in the course. The opposite action of winds mixing with impure air, or driving it along before them, is "perflation."

E. LOGAN.—If you mean the person who distributes his filthy literature in the streets of London, he is a thorough quack, and as such should be strenuously avoided. If you wish to consult a reliable physician, we can send you address of such, on receipt of stamped addressed envelope.

MENTAL.—The remedies to which you allude could only be prescribed by a medical man who was in the habit of seeing the patient daily.

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M. F.—You might give the Cubeb Cigarettes of Marshall, to be had at any druggist's, a trial, or the Asthma Cure of Himrod might be employed. These remedies will relieve the attacks, but you should take, during the winter months, a little of Scott's Pure Cod Oil Emulsion, after food. Attend also strictly to your diet, and see that you avoid any foods calculated to produce the paroxysms.

OTAGO.—There could be no harm in trying Hazeline for the purpose you name. Use it as a lotion (one part, say, to three parts of tepid water). What you complain of may, however, be natural to you, and may not be affected by any outward applications.

BUSS.—If you send us stamped addressed envelope, we will be glad to forward the address of a London specialist, who removes superfluous hairs by means of electricity. The operation is painless, and is the only certain method of removing hairs.

ROBERT L.—A bath is *cold* when it is below 85 degs. Fahr.; *tepid*, between 85 degs. and 90 degs.; *warm*, between 95 degs. and 98 degs.; and *hot*, between 98 degs. and 105 degs. Fahr. The *cold bath* of summer weather is about 55 degs. or 60 degs.; in winter about 40 degs. or even 32 degs.

PETER MOIR.—When the attacks come on, take fifteen or twenty drops of Collis Browne's Chlorodyne in a little water. This dose may be repeated in, say, four hours, if relief is not obtained. Avoid all fruits and vegetable foods, rest after meals, and take for a time strong soups and fish, &c.

G. G.—Try the effect of simply applying to the parts a lotion composed of bicarbonate of soda, one drachm; and glycerine, an ounce and a half. Wash frequently with Bayley's Soap and tepid water.

C. P. [illegible] OGEN.
from [illegible] US.
[illegible]

t Dr. A. STUTZER, of Bonn, on
n's Food";—

nd the carbohydrates present must consequently be
ydrates consist of *maltose-sugar*, *dextrine*, and *milk-*
the nourishment of the infant's organism, whilst
n unfavourable action upon children because it pro-
in the stomach, is entirely absent.
of my analysis and experiments, I must
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Recent Views Respecting Cancer. By R. T. Morris, M.D. See page 399.
Hints about Skin Diseases. See page 395.
Deafness. See page 396.

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EDITED BY DR. ANDREW WILSON, F.R.S.E. &C.

Vol. X.—No. 259. FRIDAY, MARCH 23, 1888. [Price Twopence. *Registered at G.P.O. as a Newspaper.*

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[The above letter, dated Sept., 1886, is from a medical gentleman in extensive practice in a large city in the North of Ireland.]

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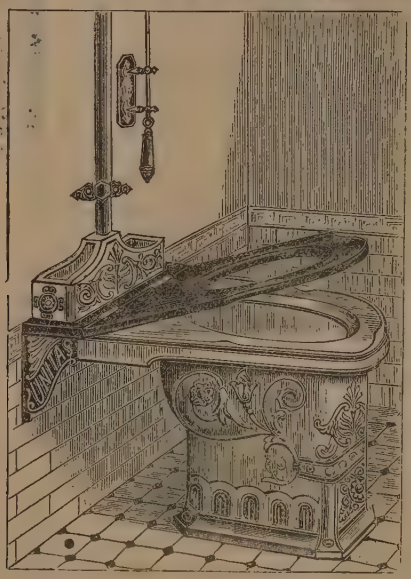

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HEALTH

EDITED BY

DR. ANDREW WILSON, F.R.S.E., &c.

LONDON: *FRIDAY, MARCH* 23, 1888.

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Notes by the Way

BY THE EDITOR.

"Health is the foundation of all our physical happiness."—*Herder.*

THE British Nurses Association is endeavouring to start a central register for nurses, and intends, we believe, to grant a certificate to all those who have been engaged in nursing for three years. Now, a woman may have spent ten times three years in country nursing, and yet not be fit to take the same standing as a young hospital nurse, just through her training. Besides, it seems a pity to put aside the certificates granted by hospitals to all who merit them. These certificates, being given by those who have a personal acquaintance with the recipient, are far more likely to be trustworthy. I fear that if nurses do not forsake their petty jealousies and unite in one effort for the good of their profession, between the Hospital Association and the British Nurses Association, they will fall to the ground.

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THAT consumption can be communicated to fowls, and from fowls to human beings has been fully proved, and a paper on this subject in HEALTH, No. 247, may be referred to for details regarding this curious topic. Recently Dr. Léon Petit described a curious case of that disease transmitted to a cat by the expectoration from human lungs. The cat was in the habit of devouring the sputa of consumptive patients. This taste, he said, had become a passion. The animal followed the patients about, waiting for them to expectorate. It used to devour the tuberculous sputa which had served for microscopical examination in M. Petit's laboratory. After a time the following symptoms were observed: the animal grew thin, its hair stood erect, the eyes were blear, a mucous secretion escaped from the nostrils; there were attacks of sneezing and coughing, followed by vomiting.

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KOCH'S bacillus, or germ of consumption, was detected in the secretion from the nose, which apparently proceeded from the bronchial tubes. At the end of two months and a half a complete change took place; the disease became modified, and the animal appeared as if she were about to recover. She had seven kittens, one of which she nursed for five months, during which time she presented no symptoms of relapse. A slight dry cough however persisted. Six months after the kittens were born the cat was killed. The lower parts of both lungs showed signs of congestion, and further examination showed that beyond doubt the disease had manifested itself in the animal frame. The bearing of young had caused the appetite to improve, and a consequent improvement in the animal's condition. M. Petit believed that had the cat lived, the improvement would have continued, and recovery would have ensued.

✣ ✣ ✣

SPEAKING of window-cleaning accidents, a medical journal wisely says that attention has been repeatedly called to the extreme risk to which servants are exposed when standing or sitting on the outside ledges of windows for the purpose of cleaning them. It should go without saying that such work is wholly unfit for female servants, and they ought never to be permitted to clean the outside of windows at all. Even for men, unless they are steady, careful, and "strong"-headed, there is much danger. Yet what is to be done? The professed window-cleaners are generally reckless of carpets and paint, and the percentage of panes of glass they break, while repudiating all liability for damages on frivolous pretences, is very large; moreover, they are so arbitrary in their practices and aberrant in their arithmetic that it is a misery to employ them.

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WINDOWS ought to be so constructed as regards sashes that they could be cleaned from the inside. Where this is not practicable, it is better to use long-handled pads, which do not necessitate either standing or sitting on the ledges, or leaning against the too often broken or insecure frames themselves. It is lamentable that limbs and lives should be imperilled and occasionally sacrificed in the performance of a simple and quite

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ordinary domestic function which ought to be wholly free from risk.

✣ ✣ ✣

An interesting physiological point, says the *Lancet*, namely, "Are asses capable of vomiting!" is now being discussed in Paris. M. Zola, in his last work, "La Terre," depicts an intoxicated ass, and concludes with an account of the animal in the throes of sickness. M. Sarcey has taken offence at this unpleasant piece of realism, and in a review of the work affirmed that the ass was incapable of being sick, and brought forward the evidence of a veterinary surgeon to the effect that the structure of the stomach of an ass renders vomiting impossible.

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M. Zola writes back and turns the tables on his adversary by stating that he had read up the principles of equine or asinine physiology before venturing to describe the matter in question, and refers the veterinary surgeon to his studies. In point of fact M. Zola is perfectly correct. It is commonly but incorrectly asserted that the horse and ass cannot vomit. It is true that they vomit rarely and with great difficulty, the reasons being that the stomach is small, that the œsophagus opens into the stomach much nearer the pylorus than in the dog or man, so that the cardiac portion forms a large sac, against which the contents of the stomach are pressed when efforts to vomit are made.

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The contents of the stomach are, moreover, usually rather dry, and do not remain long in the interior of that organ, and finally the œsophageal (or gullet) aperture is small and highly muscular. The latter point is undoubtedly of importance, since horses, and we presume asses also, vomit readily enough when by disease or operation the cardiac sphincter (or muscle guarding the outlet of the stomach) is paralysed. M. Zola, says our contemporary, if not very delicate, at least studies his art.

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Sawdust to pack ice in is believed to be the best material, but this is very difficult to obtain in some parts of the country, where there are no sawmills. A correspondent of the *Country Gentleman* says that, next to sawdust, oat straw cut short, if the oats have been thickly sown, so as to make the straw small and soft, capable of packing well, without air-crevices. If uncut, or cut rather long, it is liable to contain small crevices through which air may find its way, but if cut only a fourth of an inch in length, it may be placed nearly as compact as sawdust.

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Next to oat straw is fine, soft hay. Wheat straw is too stiff, and will not pack solid, although, by very short cutting, it will answer if a greater amount is used. Good, fine sawdust, well packed, need never be more than a foot in thickness; chopped oat straw will answer, well packed, fifteen inches; but chopped rye or wheat straw should be twenty inches or two feet. Unchopped fine hay or oats will be quite as good as chopped wheat straw. Much will depend, however, on the care and skill with which the packing is applied, so as effectually to prevent the entrace of air through small crevices.

✣ ✣ ✣

Hastings as a health-resort does not belie its ancient reputation. Its last health-report is of gratifying nature. In a population of over 53,000, Mr. C. Knox Shaw is able to point to a death-rate for the past year of 14·50 per thousand, or 1·41 per thousand below the decennial average. The sanitary condition of the borough is in all respects very excellent.

Original Essays

"Life is not to live, but to be well."—*Martial.*

OVER-POPULATION.

By Dr. Andrew Wilson.

Glancing over the pages of the *Nineteenth Century* for the current month, one observes two attractive papers dealing with a couple of social problems which, curiously enough, affect the extremes of human life. Mr. Leonard Courtney, M.P., writes upon "The Swarming of Men," while Dr. J. Burney Yeo contributes an admirable paper on "Long Life, and How to Attain It." It is not my purpose here to discuss either of these contributions in detail. The principles in virtue of which the two themes become intimately related to one another may, however, be briefly glanced at, because, in truth, they form the basis of a social study well meriting the attention of every thoughtful person.

Primarily Mr. Courtney discusses the question of the over-population of our land, while Dr. Yeo deals with the subject of the extension of life among the units of our population. The former describes the social phases which attend the births of the population; the latter concerns himself with the causes and conditions which delay death, and place length of days as a gift within the right hand of the sons of men. Time was, when all questions of over-population had a tendency to become discreetly shelved. These were the days when trade was brisk, commerce prosperous, and the wants, or even the luxuries, of life readily supplied. Things have changed greatly even within the past ten years. People of by no means a philosophic turn are being forced to scan the social horizon with a grim closeness of view which is, in its way, a telling testimony to the forces at work in the dissipation of prejudice. The question of over-population is no longer discussed with bated breath; and it is well for the work that freedom of speech and thought in respect of this matter should prevail. Even the question of the London East-end workers and the "sweating system" has to fall back on the detail of too many eager hands and an overplus of starving mouths, as the conditions which render fairly recompensed labour an impossibility in every great centre. The Jew "sweater" would find his occupation gone if he had a more limited population to draw upon for his oppressed workers. In other directions the strain is telling with trebled force. The professions are becoming overstocked at a rate which reduces medical fees, makes each vacant school or pulpit a prize to be sought after with over-energetic competition, and which adds largely to the number of briefless lawyers. Advertise for a clerk at a modest salary to-day in London, and note the thousands of applications which are received in reply to the announcement. Think of the difficulty fathers find in placing their sons in the way of earning even a modest competence. With such signs of the times before us, it is needless to allege that the cry of over-population is a myth. Contrariwise, this condition of things is a hydra-

Jensen's Cod Liver Oil is acknowledged as the best because it is the only Oil made from absolutely fresh Livers. It prevents all Coughs, Colds, Asthma, Bronchitis; it makes the Digestive Organs act, and is the only remedy of any value in cases of Consumption; it is sweet and pleasant—cannot by any possibility cause any aftertaste, while all its nourishing virtues are retained. Of all Chemists, &c., in bottles, each Wrapper bearing the Registered Trade Mark (an Iceberg) if genuine, at 1s., 2s., 3s. 6d., and 6s. 6d.; or, post free, of Hertz & Collingwood, 101, Leadenhall-street.

headed monster threatening to absorb in its train most of the items whereon the prosperity of any nation may be said to depend.

It is true, of course, that the growth of health-science and the diffusion of a knowledge of health-laws among the people have a tendency to increase, in one sense at least, the evil of an over-crowded country. That there has been an immense saving of life effected within the past decade is undeniable. Countless lives have been preserved from infectious diseases, for instance, which twenty-five years ago would have figured as items in the death-roll of the State. In this sense, it is evident, the spread of health-knowledge must tend to favour over-population. But, after all, health-science is only an indirect factor in the process. It can operate, let us note, only on the individuals who are born. The real problem of over-population goes far deeper into social life than the mere preservation of life from disease and death. The primary condition involved is the increased and excessive birth-rate. When individuals appear on the stage of time, health-science operates to increase their chances of long life and happiness. What the philosophy of these latter days demands is that fewer individuals should be born. The main contention is, that with a decreased birth-rate we should have more room to live, a better chance of healthy existence, a less fierce struggle for existence, and in other respects a more comfortable life all round.

The problem before us is fraught with considerations which were elaborated long after the days when Parson Malthus wrote of over-population. If the births among the upper and middle classes—or, in a word, the educated units of the population—are being restricted in numbers, the opposite is largely true of the births among the masses. The considerations which may weigh with educated persons against over-increase of their families are not likely—at first, at least—to affect over-population among the working classes. The great fertility of the masses is opposed to the relative sterility of the classes, to quote a hackneyed phrase, with the result that the excess of population must come to tell, sooner or later, in favour of a tremendous increase of the lower grades of society.

Here there looms on the social horizon an obvious danger. The excessive increase of the less educated masses cannot be an item which the most radical amongst us may view with unconcern. On all grounds, from difficulties of Government to increase of pauperism, such a contingency is as undesirable as can be formulated. That at which reform must aim is restriction of population among all classes. No one grade of society stands or falls by itself. We are inter-dependent throughout the whole social fabric. That which is desirable for Belgravia is as requisite for Bethnal-green. There is, after all, in a widespread principle of this kind, a community of opinion to be observed as rigidly in the palaces of the West as in the slums of the East.

Whatever teachings, then, social reformers are tempted to place in the foreground of their instruction, I opine the doctrine that a man has no right to bring into the world more children than he can comfortably support, educate, and start in life, must be held to be a fundamental proposition of our social and moral code. That as yet all classes require to be educated up to this sound maxim of successful, happy, and healthy life, is, I take it, undeniable. Is the poor curate, with his dozen olive-branches, his sickly wife, done to death by child-bearing, and his perennial struggle to approximate ways and means an unknown fact of our time? Is the pauperism of our day decreasing? Do hard times press less hardly on working-folk who struggle bravely on to provide for their large families? Is middle-class existence an easy thing to thousands of persons who, but for the eternal anxiety engendered by an overplus of children, might have lived in comparative comfort and relative ease? There is no gainsaying these facts; and the outcome of the whole matter will be that what men once upon a time were content to discuss with bated breath, will become the theme of the market-place. It is surely the flimsiest of all false modesty to pretend that society is not ready and willing to discuss the over-population problem, when the pressure at our gates is making paupers of us all, and when life is being made miserable through the exigencies of the conditions under which our birth-rate is being year by year increased.

One may legitimately hold that the chances of long life are indeed imperilled by the strain of population to which I have alluded. Mr. Courtney asks, very pertinently, I think, whether "It is an imaginary danger that the multiplication of the means of life may, locally at least, be arrested, whilst the multiplication of men continues?" I apprehend any adequate consideration of this question must take grave account of a negative answer. The danger is not an imaginary one by any means, and every winter demonstrates that fact to a waiting world. The problem is undeniably a complex one. It involves, admittedly, considerations which trench nearly upon questions of morality, matters of physiology, and details of sociology. But if we are fully to discuss over-population and its remedies, would such free and earnest consideration of the matter be more objectionable or less modest than the mere facing of all the horrors and vicissitudes which, in the case of the poor especially, require to be argued about freely enough to-day? I venture to think not; and I rejoice to note that there is a growing tendency in our midst to ventilate all social problems, and to make earnest inquiry into feasible methods of reform.

This article is simply a plea for the fuller consideration of a grave social subject. Over-population is not a theme which can be shelved. If to-day we neglect it, to-morrow it will appeal with increased force to us, and with added difficulties to overcome. When emigration has failed or grown unpopular, or when sparsely-populated tracts have in their turn become over-populous; when pauperism and crime have become excessive, as, indeed, these conditions in some districts even now appear; when such panaceas as education, health-knowledge, and adjustment of political conditions have served their limited purpose—then we shall require to make the population question the backbone of social reform. My argument is, let us begin to consider the question now, for all other problems will, sooner or later, pale in importance before that of "the swarming of men."

Josh Billings on Doctors.—Doktors are not all quaks; you hav got wrong noshuns about this. Doktors, lawyers, and ministers hav a hard row to ho; they hav to deal with the kredulity, knavery, and fears of the people—three ov the most difficult traits in human natur tew handle. If i was a doktor and understood mi bizziness, i should doktor mi pashunts, and let the disease take care ov itself. More folks are kured this way than enny other. It ain't much trouble tew doktor sick folks, but tew doktor the well ones is bothersum.

GROSS FEEDERS.

By Dr. W. Curran.

(Concluded.)

Furetière saw a man "eat, without pausing to take breath, a loin of veal, a capon, and two woodcocks, with four pounds of bread"; and another man of his acquaintance swallowed at a meal, in 1812, for a wager, as much tripe as would make him a jacket. His opponent beat him by a waistcoat and nether garments of the same material; and readers of Rabelais may remember that "the good man Grangousier bade his wife eat sparingly of this article, because (as he said) she was near her time, and that these tripes were no very commendable meat." Moore tells a story of the brothers Smith, Horace and James, who became literary lions after the publication of their "Rejected Addresses," and were accordingly asked everywhere, which is, I think, worth reproducing here. Being once invited by the Countess of Buckinghamshire to an evening party in terms of rather offensive patronage, they answered her thus (and this is my reason for introducing this episode): "Mr. James Smith regrets that previous engagements deprive himself and brother of the honour of accepting the Countess of Buckinghamshire's obliging invitation, his brother being engaged to grin through a horse-collar at Peckham fair, and himself to *eat tripe for a wager* against the dogs in Clare market." This letter "fetched," it need hardly be said, the Countess, and they were asked to dinner immediately afterwards in due form.

One more episode of this kind, and I have done with this phase of the question. Voltaire is my authority for it, and it runs to the effect that while Charles Gustavus, of Sweden, was engaged at the Siege of Prague, "a peasant of most appalling aspect, with tusks like a wild boar, entered his tent, and offered, by way of amusing the King and his suite, to devour a whole hog, weighing two hundredweight. Old General Konigsmark having hinted at the propriety of burning him as a sorcerer, the fellow offered to eat him before he set to at the pig, provided he'd only take off his sword and spurs"; and it would be interesting — could such a gathering be brought about—to assist at "a set to" between Milo, Maximin, Vitellius, this fellow Domery, and Jerry Eke.

As with the individual, so with the nation whereof he is a member, and many tribes and peoples are remarkable for their gluttony and voracity. Northern nations are also very fond of fat. They find it more warming than any other, and it is well known that many Swiss and other Continental hotel-keepers keep a sharp look out over their soap and candle-ends when Russians or other hyperborean travellers patronize them. It is also certain that hybernating animals accumulate in the autumn the fat whereon they live during the winter, and the story of the fat pig that was accidentally buried in its sty under the cliff near Dover Castle is well known.

This creature actually lived 160 days in this state on its own fat alone. "At the time of the accident this animal was (we are told) supposed to have weighed 160 lbs.; when extricated, it presented an extremely emaciated appearance, and weighed no more than 40 lbs.;" and it is admitted now that fats and carbo-hydrates are the main, if they are not, indeed, the exclusive, producers of that combustible matter that "makes the mare go." Sir A. Carlisle found that the infants of the Northern races, whom he once visited, "made wry faces and sputtered out the sugar (he gave them) with disgust, while they grinned with ecstacy at the sight of a bit of whale's blubber"; and I have already quoted the "ingenious Mr. Little" as saying that a Russian *pur sang* "will sigh for train-oil while he sips champagne."

This being so, there will be little or no difficulty in understanding the narratives that are given in this connection by navigators and others, and one of my objects in entering here into these explanatory details is to rescue these reports or stories from the reproach of being merely "travellers' tales." They are nothing of the kind, but true descriptions of actual facts, and I have only room for a few examples in point. Thus, speaking of the voracity of the Mongols—a Northern people—Col. Prejevalsky says ("Mongolia," vol. I. p. 55) that "the gluttony of this people exceeds all description. A Mongol will eat more than ten pounds of meat at one sitting; but some have been known (he says) to devour an average-sized sheep in the course of twenty-four hours. On a journey when provisions are economized, a leg of mutton is the ordinary daily ration for one man, and although he can live for days without food, yet, when once he gets it, he will eat enough for seven."

The stories that one hears or reads about the Esquimaux and their stomachal capacities would be incredible, were they not so well authenticated. Thus, alluding to these features of their domestic economy, Dr. Kane estimates ("Arctic Explorations," vol. II. p. 134) the Esquimaux ration in a season of plenty "at eight or ten pounds (of meat?) a day, with soup or water to the extent of a gallon"; and Sir John Ross tells us that "an Esquimaux will eat twenty pounds of flesh and oil daily." They derive, in short, their name from an Indian word that signifies *eaters of raw flesh;* and after they have thoroughly dried the flesh of the beasts they kill, they eat the same without any further preparation. A "tit-bit" amongst them is the liver of the walrus, eaten with little slices of its fat, "and it is of a verity (says Dr. Kane) a delicious morsel."

Sir W. Parry tried one day, as a matter of curiosity, how much food an esquimaux lad, scarcely full grown, would consume if allowed his full tether. The food was weighed, and besides fluids, he got through in twenty hours, 8½ lbs. of flesh and 1¾ lbs. of bread and bread dust, and did not consider the quantity in any way extraordinary. The following is another observer's description of their powers. Describing the impressions that were produced on him by seeing a group of these natives devouring twenty yards of "black skin"—*i.e.*, the outer hide of a whale, three-fourths of an inch thick, and looking like india-rubber—Captain Hall says that "they continued this exercise without intermission all day long. Their custom is (he says) to get as vast a piece into their distended mouths as they can cram into it, and then, boa-constrictor like, first to lubricate it all over, *and so swallow it quite whole.* Reindeer flesh is a great luxury with them, and (he adds) that walrus, bear, seal, and whale constitute their ordinary food."

But great as are the digestive powers of the Esquimaux, those of his neighbour the Yakuti are greater still. Captain Cochrane says—according to Peter Lund Simmons, "The Curiosities of Food," (Pavy) pp. 407-8—that "one of the Yakuti—whom he tried—consumed, in twenty-four hours, the hind quarter of a large ox, twenty pounds of fat, and a proportionate quantity of melted butter for his drink," and Sir George Simpson emphatically adds that "they (the Yakuti) are the best," biggest, I suppose he means, "eaters on the face of the earth." He proved this to his own satisfaction in this wise. He procured a couple of men who had, he states, a tolerable reputation in that way, and prepared a dinner for them, consisting of 36 lbs. of beef and 18 lbs. of

butter for each of them. They had got through half this by the end of the first hour, and when he returned two hours afterwards all had been consumed. He adds that the skin of these brutes' bellies hangs down in folds which become gradually filled and protuberant after they have eaten their fill, and if, as Silas Meek maintains in "Baron Grimbosh," pp. 98-9, that "the habitual consumption of flesh produced in the flesh-eater a character similar to that which he consumed," our friend the Yakuti must, indeed, be an unpleasant party to deal or rather "go to bed with."

(Describing the horrors that followed the battle of Aughrim, and after alluding to the appearance of the slain, whose bleached bodies dotted in all directions the horizon, Macaulay says that the dogs of the neighbourhood, which fed on these, became so fierce or so fond of human flesh afterwards that they waylaid travellers in packs, and became otherwise so fierce as to call for wholesale destruction at the hands of the authorities.)

Looking now, in conclusion, to the opposite side of the world, we find a somewhat analogous, if 'tis not, indeed, a very similar state of things. I have already dwelt upon some features of this situation in my papers on "Cannibalism," and so need not go into them again, and this essay has already attained such a length as obliges me to rush, rather than proceed leisurely, towards a conclusion. Sufficient, then, to say that, according to Barrow and others, as these are quoted by Dr. Pavy, "the Hottentots and Bosjesmen are the greatest gluttons on the face of the earth." Ten of the former ate a middling-sized ox in three days, while three of the latter disposed of a sheep in less than twenty-four hours, and, as if still further to confirm the Darwinian doctrine of the kinship of man with his congeners, "the beasts that perish," these gluttons remain after these surfeits for three or four days, like jackals, tigers, &c., in a state of stupor, neither eating nor drinking, but being meanwhile rolled about by their friends, to enable them the better to digest these masses. Indian servants, coolies, &c., are often useless for two or three hours after their ordinary meals, as I and others can testify to our costs.

The two following extracts must, for the reasons already given, suffice for the purpose I had in view in writing this paper, and for the rest, travellers must all have seen varied illustrations of this kind of capacity and consumption. I saw them myself among the lightermen of my natal river, the Blackwater, as well as in Kashmir and Ladák; they are, I dare say, no less conspicuous among the bargemen and coal-heavers of the Thames and the Tyne. Speaking of the New Zealanders of his day, the late Dr. Thomson said that "they often devoured at a summer feast all their winter food. . . . Sixty pounds of fresh pork have been devoured," he intimates ("The Story of New Zealand," pp. 160–1), "by one man in twenty-four hours. Like animals of prey, their stomachs are inured to sustain the extremes of hunger and gluttony," and similar traits may doubtless be found among the other denizens of these latitudes. Indeed, Mr. Chambers says as much in his "Pioneering in New Guinea" of the natives of that island, and "the quantity of food which these people (the Otaheitans) eat at a meal is," says Cook ("Hawkesworth's Discoveries in the Southern Hemisphere," vol. ii. p. 202), "prodigious. I have seen," he adds, "one man devour two or three fishes as big as a perch, three bread-fruits, each bigger than two fists, fourteen or fifteen plantains or bananas, each of them six or seven inches long and four or five round, and near a quart of the pounded bread-fruit, which is as substantial as the thickest unbaked custard."

Personal Health

"Be timely wise;
With health all taste of pleasure flies."—*Gay.*

HINTS ABOUT SKIN-DISEASES.

The two most common diseases of the skin are, firstly, moist tetters or eczema, and, secondly, scaly tetters or psoriasis.

Eczema or moist tetters is the most prevalent skin-disease in the world, and it has been stated that more than one half of the people of Great Britain are afflicted with it. It occurs among the youngest infants, the hale and hearty in middle life, and the aged. Its chiefest characteristics are that it is *moist and weeps*, and that it is *accompanied by itching* of the most aggravating and intractable character. What the exact causes of eczema are it is difficult to say; but it is probable that a predisposition to the disease is inherited in a few cases, and cultivated in nearly all, by improper living.

In the young infant it is frequently seen in the folds of the skin, as under the ear, about the mouth, &c., and is easily cured by benzoated oxide of zinc ointment, prepared with an equal part of lanoline. At the same time, the child should be given cod liver oil, which, in the form of the Kepler Solution, youngsters generally like, as it is made with a delicious malt extract.

Eczema in middle life is of a different type from that in children, in whom it is composed mainly of crusts. Ordinarily, in adults it has three stages, in which there appear—

1. Vesicles (which contain serum).
2. Pustules (which contain pus).
3. Desquamation (wherein there is drying and scaling).

The skin is thickened and not easily pinched in small quantities between the fingers, and is more or less inflamed. As pimples appear, the itching becomes intense, and the site of a coming vesicle (little blister) is easily foretold by the patient. The water in the vesicle thickens into matter; this dries, and the whole may be scraped off, leaving a red base. Sometimes it will be thought that the disease is nearly cured; when new pimples will appear, and the disease breaks out afresh as bad as ever.

The cure of eczema must, of course, prove of much interest to all who have the affection. Though the tendency of the disease is to cure, it may, nevertheless, continue for a life-time. There is hardly a drug which has not been used to eradicate it. The other day we met a prominent man from India who had cured himself, after suffering many years with eczema, by eating meat only once a day, and shunning alcohol in every form. As we have seen gout cured in the same way, it is probable that the eczema was here associated with a gouty element. Nearly all eczematous people are dyspeptics, and it is likely that the eczema cannot be cured as long as the dyspepsia continues. To relieve the itching, nothing is better than carbolic acid, ten minims of which should be rubbed up with an ounce of benzoated oxide of zinc ointment, made with lanoline. Arsenic has been recommended, but does not relieve a very large number of patients. Icthyol has been prescribed by Unna, but we have had no personal experience with it.

In inflammatory conditions of the skin, a beautiful tonic and emollient is toilet lanoline. The hygienic surroundings of the patients should be regarded.

Psoriasis or scaly tetters differs from eczema in that it

is never moist; in that the scales rubbed off are silvery; that it generally occurs on the outside of the arms and body; that it usually appears in circles, and *does not itch*. Furthermore, it is most common among those in perfect health, and is often inherited. We have known a mother who had it, one of whose three children had it, while the second had cancer, and the third was a deaf mute. We recall another case, where two sisters had psoriasis, and their brother cancer of the stomach. Psoriasis, if not too inflamed, may usually be cured, *pro tem.*, with Goa powder—ten grains to the ounce of lanoline. This prescription has cleared up psoriasis of twenty years' standing. Arsenic is good in some cases, and so is sulpho-icthyolic acid.

DEAFNESS.

The conditions and troubles of defective hearing may not interest the general reader, for none but the sufferers themselves have any idea of the burden of sorrow imposed by the impairment or deprivation of the sense of hearing. Nothing save blindness is so hard to bear, especially for those full of ambition, and otherwise capable of the full enjoyment of life.

But there are comforts even in deafness. We can see the faces of our loved ones, we can enjoy all beautiful sights—the lovely flowers, the rich landscapes, the glorious sunsets, and all the beauties of nature—while all arts save music lay their treasures and achievements at our feet. The pleasures of travel, too, are not less to us—perhaps in many respects they are rather enhanced.

We can make the pen available by correspondence, and so benefit ourselves and our friends. We can use the brush, and enjoy our labour at the easel, and we can employ our hands for our own and others' comfort and happiness in a thousand ways.

Deafness is far more common than is generally supposed, and is especially prevalent among the middle-aged. Medical works assert that fully one-third of our population between the ages of twenty-five and fifty are partly deaf, the trouble having come on so gradually that fully one-half of those afflicted are unaware of it until sufficiently advanced to become troublesome.

We believe the best aurists agree that there is no help for hereditary and congenital deafness, or those cases where the nerves are paralyzed. A very common cause of temporary deafness is hardening of the wax of the ear, and the trouble may become serious if not relieved by prompt and proper treatment at the hands of a good aurist. Where such aid is not available, it is safe and possible to remove the wax by putting into the ear two or three drops of pure glycerine three times a day for three days, and then syringing with warm water (as warm as can be comfortably borne) in which a little carbonate of soda has been dissolved. Use a teaspoonful to one quart of water.

The ear being a very intricate, delicate, and sensitive organ, no patent nostrum should ever be introduced into it nor any quack ever allowed to tamper with it. Only the very best aurists should treat it. Many disorders and conditions of the inner parts of the organ are beyond the reach of medical skill. Such cases are disheartening. Obstruction of the Eustachian tube (the tube that connects the tympanum, or ear-drum, with the back upper part of the throat) is a frequent cause of deafness. Inflammation of the throat, affecting this tube, also causes it. In either case, a good aurist can afford speedy relief by removing the obstruction or allaying the inflammation.

Catarrhal deafness usually disappears when the cause is removed, if the trouble has not become too deeply seated. Early manifestations of deafness should not be overlooked or neglected. Elderly people are often deaf because vitality is declining generally; the hearing, in common with the other powers, shows the approaching weakness and decay of age. Some persons whose hearing is ordinarily very acute are quite deaf when extremely weary.

Rupture of the drum membrane by an accidental puncture, by whooping-cough, or by a blow on the head, is among the causes of deafness. The sudden concussion of air against the delicate tympanum, caused by the discharge of heavy artillery, has often more or less impaired the sense of hearing, and, strangely enough, in some reported cases where the hearing was already weakened, has restored it. Many soldiers were made deaf during the war. The ears sometimes seem entirely stopped up by a severe cold; but let them alone, treat and remove the cause, and the effect will probably disappear.

Climatic causes produce deafness. We have visited a county in central Pennsylvania where deaf people are the rule and those with good hearing the exception. In districts in Alpine Switzerland the same peculiarity has been observed. Another cause of deafness is the thickening of the lining membranes of the ear, and for this there is no known remedy. It may be constitutional, or caused by ulceration after scarlet fever, or by other diseases; but it sometimes comes on without any known or apparent cause. All that can be done in this case is to palliate the trouble by using an ear-trumpet, or, better still, an audiphone. The latter is now oftenest made in the form of a fan of vulcanite, and being black, and a seeming accessory to the toilet, is in no respect objectionable, as was the large ear-trumpet of former days. There is a very small ear-trumpet made that is helpful. These instruments are of great assistance in hearing lectures and the like, as well as in lending distinctness to conversation.

It has been said that "Deaf people are always proud." Call it pride, if you will, but why needlessly proclaim a misfortune (which, unlike blindness, is not often evident) by using a conspicuous and forbidding instrument? One does not care to emphasize his own personal afflictions for the observation and comment of others.

If people only knew how to talk to the deaf, a great many heart-aches would be saved. First, have a little consideration, and by a very trifling motion, which they readily see and understand, call their attention to you; then articulate clearly and distinctly—not too fast, and not too loud. It is this shouting into the ear of a deaf person that fills him with confusion and sends all the blood to his face; by his wavering and equivocal responses he sometimes hardly gets credit for due intelligence, although he may really be very well informed on the subject under discussion. He had hoped you would speak low and distinctly; he could then have heard you, acted like himself, and been himself; but now all within hearing know he is deaf, think he is very deaf, and look upon him with commiseration perhaps, as well they may; perhaps gaze at him much, and long and rudely too. This only adds to his perplexity, and induces fresh resolves never to go again where there is any danger of the occurrence being repeated. Strange as it may seem, some deaf people often hear much better in the noisy street, or travelling in the cars, than in a quiet place.

This is the reason why deaf people shun society, for there lie the rough places in their pathway, because few know *how* to talk to them. We do not mean the very deaf, but those who enjoy a chat or a conversation with

a friend without discomfort. Their greatest trouble is to hear mixed conversation, sermons, and the like. Familiar voices are easily heard by the partly deaf: so they are happiest at home, and avoid general society. The annoyances that seem to accompany the deaf are numerous, and often very hard to bear. It leads them very often to renew their determination to stay closer at home, plunge deeper into books, and try there to find compensation for the unattainable pleasure of social intercourse. —*Katharine Armstrong, in "The Century Magazine."*

Children's Punishments.—Since the time when the wisest of rulers advised that the rod should not be spared in childhood, various opinions have divided the minds of men with regard to this subject. History has described, and tradition handed down to us, a variety of chastisements, moral and physical. No one, probably, has ever seriously denied the need of some form of correction. The birch, the cane, the strap, the "tawse" (familiar to many a northern urchin), the box on the ear, and other ready methods have vied with less abrupt, but not more genial, means—impositions, confinement, temporary forced abstinence, and many more—in seeking an established place in the *régime* of the school and the family. Something might be said for most of the varieties above mentioned, but there is one objectionable practice which cannot under any conditions be permitted. Boxing or pulling the ears, or, indeed, striking any part of the head, is most injudicious. Whatever excuse may be made for the practice as a part of our social system, it can find no sanction in medical circles. Serious and irremediable injury may easily result from so simple a proceeding as a cuff on the ear. Fortunately for the reputation of penal force as a remedy, every form of corporal punishment is not equally objectionable. In applying it, however, some regard must be had to the type of child under correction. Thus, it would be unjust to allot a chastisement suitable for robust children to their nervous or feeble companions. The punishment in the latter cases would be doubly felt, needlessly severe, and out of proportion to the offence. As regards moral means of correction, again, it may be doubted whether they are commonly less harsh or more effectual than physical methods judiciously used. For sensitive children they may sometimes, no doubt, be preferable to more drastic measures. They may possess, as in the case of school impositions, a certain educational value which should not be overlooked. The objection to such as imply confinement indoors is a somewhat important one in cases where the culprit is some poorly-nourished youngster to whom fresh air is a luxury, or in any case where the punishment is frequently repeated. In most cases, however, an occasional extra half-hour in school should do no great harm. Still, there is no reason why such means should supersede the physical methods. —*Lancet.*

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"HARKING BACK" IN HEALTH AND DISEASE.

By T. W. Mills.

SECOND PAPER.

Hibernation is one of the most interesting examples of physiological reversion to be found. We witness in the bat, though one of the most active of animals, a return during hibernation to a condition very much like that normally present in a cold-blooded animal such as the turtle; while the cold-blooded groups themselves pass into a winter sleep allied to the quiescent state of plants or the "resting stage" of the infusorians. Reversion alone—physiological reversion—seems to explain such behaviour.

These general phenomena prepare us to understand certain results following experiment, which, so far as I know, physiologists have never explained satisfactorily. I shall take my illustration chiefly from cases mentioned in the ordinary text-books, and especially from the magnificent work of Prof. M. Foster, as in that we find subjects usually considered from different points of view.

It has been pointed out that if the nerves supplying the posterior pair of lymph hearts in the frog be divided, though their action ceases for a time, it is eventually resumed; that if the sino-auricular junction of the heart of the turtle be ligatured under favourable circumstances, the action of the auricles and ventricle, temporarily arrested, may be resumed.

In general, if the sinus, or the sinus and auricles, be ligatured off from the ventricle in a frog or turtle, and all the cardiac nerves be divided (precluding the possibility of nervous stimuli reaching them from distinct centres), these parts of the organ, I have observed, will beat more forcibly against the unusual resistance than before.

It is stated that when the cervical sympathetic nerve is divided, the dilatation and cessation of rhythmic action of the arteries in the ear of the normal rabbit ensuing, are finally followed by a return to the normal condition.

The latter has been explained by the assumption of a local nervous mechanism, which, though habitually influenced by the central nervous system, suffices of itself when the connection with the nerve-centres is severed; but such local nerve-mechanism has never been demonstrated anatomically. These and many similar cases are explicable by physiological reversion. In lower forms, in which it is quite impossible to believe in a local nervous mechanism at all, there is pulsation in vessels, &c., owing to the rhythmical action of unstriped muscular fibre or of the heart-muscle. This function of the muscle is no doubt under the control of the nerve-centres in all the higher groups of animals; and when it is exhibited apart from such connection, we naturally seek for an explanation. To my mind, the only one adequate is to be sought in physiological reversion. Whether there are not examples of it even when the nervous system is intact, as in excessive action of the bladder, ureter, &c., in cases of obstruction, is worthy of consideration.

Dr. Pye-Smith has maintained, from certain experiments made by him, that the vessels of the ear of the

rabbit, &c., do not regain their tone after section of the nerves concerned, and concludes that nerves are not essential to nutrition. However it may be as to the first proposition, I cannot help thinking that the author's conclusions are broad to the verge of decided error when applied beyond the case in point.

Assuming, however, that in most instances the vessels do not regain tone, I should interpret the case as one of still more remote reversion to a condition when nerves were not required for nutrition—a condition existing in several large groups of animals. Such a case in the mammal must be very rare, however, and is offset by thousands of facts that show that nutrition is dependent on nervous connection. It would appear that oxygen may be absorbed both from the skin and the alimentary canal; and, if we may judge by many analogous instances, this capacity would be augmented when the individual greatly needed such help, owing to imperfect action of the lungs. In such instances we have, on the one hand, a retained function operating in man to a very minor degree; but, as is now well known, in batrachians the skin is an important respiratory organ, though also one acting very much in a manner supplementary to the lungs, as circumstances necessitate. When in man the skin and alimentary canal function as respiratory organs to an unusual degree, we have physiological or pathological reversion.

It is well known that in certain pathological conditions (hysteria, &c.), large quantities of gas are secreted by the alimentary tract; nor is this so surprising when it is remembered that the digestive canal and the respiratory organs have a common origin from the same cell layers of the embryo.

If our swallowed oxygen can be absorbed by the alimentary canal, of which there is no reasonable doubt, it is plain that we retain a function discharged by an analogous organ, the air-bladder of fishes. Certain groups of turtles (if not all, occasionally, as I believe) have a species of pharyngeal respiration. Oxygen is absorbed from the water gulped into the pharynx, and possibly the case of absorption of gases from the alimentary canal of mammals is still more like this than the analogous instances already mentioned; but, at all events, there is a potential capacity in the alimentary tract of man for respiratory functions which is unquestionably, under certain circumstances, considerably developed; and the most natural explanation is physiological reversion.

In an allied system, the kidney system, we have evidences of physiological reversion. In most fevers the skin is less active, and the kidneys function excessively or at least differently; the urine, though scanty in quantity, is of high specific gravity, and thus resembles more the same secretion in not only lower mammals, but the lower divisions of vertebrates. In a whole host of diseases there is a great increase of a constituent which is but scantily present in normal urine—uric acid. But uric acid replaces urea in fishes, reptiles, and birds; and in not a few cases in man in which the uric acid is increased the urea secretion is diminished. That man's kidneys should thus have the capacity to function in a manner analogous to those of lower forms, calls for explanation. The fact that in such cases the reversion does not wholly cover the functional disturbance arising from or giving rise to this change, is not a serious objection; for it is not to be supposed that an animal adapted to new conditions should, by any reversion to an ancestral state, escape wholly or even in great part, the penalties of incomplete adaptation.

In the digestive system of man and other mammals we have interesting instances of physiological and pathological reversion. Regurgitation of food is normal in some birds, and I am inclined to believe that it is more common in lower vertebrates than has been as yet clearly ascertained. But the remarkable regurgitation of ruminants seems to be a specially developed function. Different groups of animals vomit with very varying degrees of facility. There is to my own knowledge in man a tendency to reversed action of the gullet, if not the pharynx, independent of acid eructations. Some individuals experience this when there is interference with the regularity of the action of the bowels. Cases have been reported in which there seemed to be habitual regurgitation of food, like that of birds or even ruminants. Here again the most natural explanation seems to be that the alimentary canal of mammals, including man, retains a capacity to revert to a condition existing in a higher degree in antecedent forms; or, to interpret the matter slightly otherwise, that man retains a capacity which in some lower forms has been specially developed (ruminants, &c.), and which in himself, under certain abnormal circumstances, becomes greatly developed,—facts explicable by general community of descent.

In the cases in man referred to above, the mere law of habit does not of itself suffice to explain the facts: indeed, apart from the wider laws of descent, there is very little basis for the action of such a principle; there is no fulcrum for the lever, or, at best, a very unsteady one.

In diseases of the blood or blood-forming organs we have some remarkable instances of functional reversion. Though exact quantitative determinations of blood-colour are wanting for most lower vertebrates, there can be no doubt that in mammals the quantity of this substance furnished to the system within a given time is much greater than in those groups requiring less oxygen for their tissues, in consequence of a feebler cell activity. But in cases of anæmia in man the quantity of hæmoglobin may be greatly diminished, one result of which is that the subject is reduced not only as regards the condition of the blood, but in several other respects, to a state bearing a more or less close resemblance to life in the lower vertebrates. There is diminished activity in the locomotor, the nervous, and other systems of the body. The subject requires rest, careful feeding, quiet of the mind, &c. The treatment is unconsciously based on this fact of reversion. It may be stated, in truth, that the anæmic subject is unable to discharge the functions which are most characteristic of man, and that he naturally deports himself like a lower form.

In leukæmia (or white-celled blood) there is a still more marked reversion, for the blood in this disease approaches the condition found in the invertebrates, in which, as a rule, the red blood cell or hæmoglobin in any form is wanting. This being the case, it is not surprising that the disturbance of the normal functions is so great: the marvel is rather at man's capacity to adapt at all to such unnatural conditions; which, however, is clearer on the doctrine of descent from lower forms and in the light of the conception of physiological reversion than by any other explanation.

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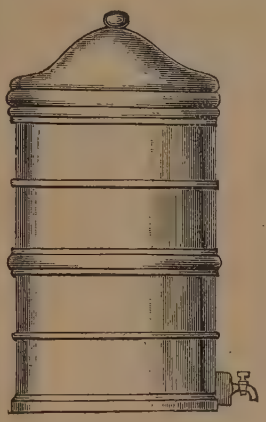

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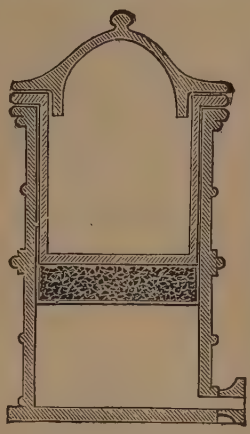

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RECENT VIEWS RESPECTING CANCER.

By Robert T. Morris, M.D.

When one of the gall-flies (*cynips*) stings the tender shoot of a rose-bush, the poison which is deposited along with her eggs excites at that portion of the twig an excessive degree of nutrition, and the resulting swelling becomes the home of the young of the fly.

The rose-bush gall is composed of nothing more than ordinary vegetable tissues; but they are abnormally developed, and there is an accompanying modification in the growth of normal structures. For instance, the vegetable hairs at that point may increase in size until they resemble large thorns, and an involved leaflet may lose its identity and become a part of the tumour. The colour-grains (*chlorophyll*), which should give to the bark a green colour, may show various shades of red instead. The rose-gall is not very different from the morbid growths of animal tissues which appear as tumours of various kinds; and we know that some, and presume that many, of the latter, are due to the disturbance caused by the presence of humble parasites belonging to the vegetable world. These parasites, or microbes, as they are called, are so small that it is impossible at present to study the life-histories of some of the species. No one has satisfactorily described any specific cancer-producing microbe, but it was only yesterday that we became acquainted with the cousins which cause the development of the tumours of glanders, of tuberculosis, of carbuncle, and of "big-head" (*actinomycosis*)—so that, reasoning by analogy, it seems more than probable that all malignant growths belong to the infectious microbic diseases, and that by to-morrow we shall have the tiny causators in a position in which they can be examined.

The malignant tumours of warm-blooded vertebrate animals are divided into two great classes—the sarcomas and the cancers. These growths are like the galls of various plants, in that they are composed not of new tissues, but of abnormally arranged tissues of ordinary character. Structures in their vicinity lose caste and become merged into tissue of some one type, just as the leaflet gives up its position as a lung for the rose and helps to build a house for the young gall-flies.

We have in cancer a sort of anarchy of cells, as it were, in which the leaders, whose work, for instance, consisted in the construction of muscle, are routed from their high positions and forced to become common members of a low organization.

Like many popular names, the term cancer is indefinite, but it is principally used to distinguish three or four forms of malignant growth from the sarcomas and from benign tumours. The benign tumours grow within limiting capsules; pushing other tissues out of the way as they increase in size, and showing no tendency to affect the blood or to appear secondarily at different places in the body of the same patient. The malignant tumours, on the other hand, are those which are not limited by a capsule. They reach out and involve all kinds of tissue which happen to be near them; they infect the blood, and new colonies form at points situated at a distance from the parent growth. There is hardly a doubt but that malignant growths are quite local at the outset, but, like red ants, the microbes make more and more nests in the same field. As with red ants, too, we often fail to eradicate the colony, because many members may be away from home at the time when the nests are destroyed.

Malignant tumours have been produced in the dog by inoculation from an infected dog, in the horse by inoculation from the dog, and the horse has been inoculated from the horse. We are afraid that cancer is inoculable between animals and man, and between man and man, but on this point medical literature at present furnishes little reliable testimony.

Why it is that the cancer microbes which enter a cut on the surgeon's finger do not regularly produce cancer in the surgeon is a fact not easily explained. It is, however, a well-known fact, that certain other species of microbes are very particular about sites for their homes, and we may suppose that the cancer microbe finds a suitable field for growth in a relatively small number of persons.

When a malignant tumour is developing at any one point the lymphatic vessels in the vicinity are involved at an early date, and they eventually serve as channels for the passage of the disease into the blood.

If a far advanced primary growth of cancer could be stained in its entirety with a black dye, and if the patient were transparent, we should probably see that the tissues round about the growth were dusky, and that a thin, smoky colouring extended through the lymphatic vessels to the veins into which they empty. As a malignant tumour increases in size at its original situation the nerve filaments are pinched, and pain is caused as a rule; but sometimes the growth will progress with little or no accompanying pain.

When an operation by a competent surgeon is performed during the early stages of the disease, it may be eradicated completely; and even in cases in which considerable headway has been gained, the surgeon is able to give long periods of immunity from the return of the growth. Patients, however, are unfortunately familiar with the traditions of old-time wound-treatment, and the dread of an operation is so great that they seldom act in the matter until it is too late to hope for a cure.

The operation for the removal of a malignant growth causes no real suffering when it is done by the surgeons of to-day, who employ anæsthetics for preventing pain during an operation and antiseptics for limiting inflammation afterward. The scientific antiseptic methods of wound treatment deal directly with species of microbes with which naturalists are familiar. According to present belief, suppuration and "blood-poisoning"—pyæmia, septicæmia, erysipelas, and lock-jaw—are due to the growth in the wound of microbes which are parasites there; and within the last few years we have learned how to stop the growth of these microbes, and to prevent inflammation after operations with mathematical accuracy. In the application of these methods to the work of removing malignant growths, operators fearlessly expose all infected tissues for great distances, and remove every vestige of the disease in cases in which a few years ago they would not have dared to operate thoroughly for fear of the resulting inflammation.

Treatment by medicines is of no avail in curing

malignant growths. The reason why medicines are useless in such cases is evident if we look at the subject through the germ theory, for it can be readily understood that any drug which is powerful enough to destroy cancer microbes would also destroy the blood-corpuscles. It is safe to say, that we shall never have a drug which will cure cancer, in spite of the statements contained in the patent-medicine advertisements. Local applications of caustics for the purpose of curing cancer are seldom made by reputable surgeons to-day, because a glance at the anatomy of a malignant growth is sufficient to show the folly of attempting to reach the deeply-infected lymphatic vessels with anything except the fingers aided by sharp eyes. Very small malignant growths can be cured by means of the local application of caustics, and large growths can sometimes be removed temporarily; and as this is easily done, charlatans have found a large field for work by appealing to the patient's dread of the knife, and promising to cure by milder means. While the patient is trying other methods than the one which surgeons of responsibility employ, the disease is usually getting such a foothold that opportunities for help are lost.

Many lives would be saved daily if cancer patients could be so educated that the delusions which lead them to tamper with so-called blood-purifying medicines and with irregular methods of surgical treatment would give place to fairly good reason. There are no secret methods of cure, notwithstanding advertisements to the contrary; and there are no ways or means for the cure of cancer that are not known to the responsible surgeons of all civilized countries.

Probably little can be done, however, in the way of directing the majority of patients properly, because the emotions of a victim of the disease are apt to be exalted, and the intellectual faculties are in consequence deprived of the exercise which they would have in conducting the ordinary affairs of life.

Legislation which prohibits illicit medical practice and the sale of useless medicines is becoming more and more strict in the European countries and in the large American cities, and it is through proper legislation alone that we can expect to see any marked decrease in the number of deaths which yearly occur from cancer.—*Popular Science Monthly.*

HOW GERMS GAIN ADMISSION TO THE BODY.

In relation to the article entitled "What is Infection," published in Health, No. 257, we note that valuable details have lately been given regarding the mode of entrance of germs into the body by Mr. Watson Cheyne, F.R.C.S., in his recent lectures, delivered before the Royal College of Surgeons of London.

In the course of his remarks, the lecturer said that the fact of germs (*i.e.*, living particles) being essential for the production of these diseases (those of blood-poisoning, &c.) "as they occur naturally there can no longer be any doubt; but in many cases much depends on other conditions, of which the chief probably are the dose or number of the organisms and their concentration, general and local depression of vitality, and the seat of inoculation. If the organisms enter in large numbers, sufficient to overcome the resistance of the body, they alone may cause the disease; frequently, however, they enter in smaller numbers, and then other conditions become necessary to enable them to act. Of these conditions the chief are, as I have said, depressed vitality—either local or general—combined with the possibility of their remaining in the weakened tissue. This depression of vitality may be brought about by conditions acting on the body generally, such as acute fevers; or by local conditions, more especially those which induce the early stage of inflammation, such as cold, injury, chemical substances, the products of the bacteria themselves, or the products of other kinds of bacteria which may happen to be growing along with them. Or, again, the favourable condition may be some peculiarity in the soil, as shown by variations in the character of the disease in accordance with the seat of inoculation and the anatomical arrangement of the part. The only factor, however, as I have said before, with which we can reckon with certainty, is the cocci themselves—I need not enter into details as to the pathology of all the various suppurative and septic diseases, it will be easy for anyone to apply the facts which have been stated to each case."

Speaking of the manner in which germs obtain entrance into wounds, and thus produce their dire effect, Mr. Cheyne said: "These organisms are fairly widely distributed outside the body. In the air they have only been found on a very few occasions, and in very small numbers. Staphylococcus pyogenes aureus has been found on one or two occasions in the air of surgical wards, as has also the streptococcus of erysipelas. Experiments have been made as to the presence of the latter organism in the air of wards in which erysipelas patients were present, and they have, in one or two instances, been found in small numbers: as a rule, however, they are apparently present only when the patients are in a state of convalescence and when desquamation of the skin is occurring, and it seems highly probable, from the observations that have been made, that they are carried in the cutaneous scales thrown off during desquamation. Erysipelas cocci have also been found in a *post-mortem* room where cases of erysipelatous infection had occurred, and in this case the infection was supposed to have come from the floor. The pyogenic organisms are very rarely present in putrefying fluids, but they have been found in decomposing beef, and in the water employed in kitchens for rinsing dishes; they are also sometimes present in the superficial layers of the soil. One of their most common seats outside the body is the surface of the skin, and they especially occur in parts where the skin is moist, for example, in the axillæ, between the nates, between the toes, &c.; they are also frequently present in connection with the hair, and in the dirt beneath the nails. Fränkel has found them in the secretions of the healthy pharynx, and Bockhardt found "aureus" and "albus" in large numbers in the nasal mucus of a patient suffering from chronic catarrh of the nose, and, at the same time, affected with sycosis of the upper lip."

These valuable hints, firstly, corroborate what was said in the article on "Infection," regarding the probability that a healthy body throws off or refuses to harbour germs which find a ready lodgment in the ailing or unhealthy frame. The argument for maintaining a high standard of general health is therefore greatly strengthened by Mr. Cheyne's observations. In the second place, these observations clearly enforce the high importance of cleanliness as a preservative of health. Personal cleanliness and the frequent use of baths are thus shown to be measures upon which a great safety, as regards infection, may be placed. Household cleanliness is likewise demonstrated by Mr. Cheyne, in the last paragraph quoted above, to be no less important as preventive of the dissemination of the omnipresent germs to which we owe so many and such fatal ailments.

Jottings from the Journals

"Th' ingredients of health and long life are
Great temperance, open air,
Easy labour, little care."—*Sir Philip Sydney.*

Ancient Embalming.—Pettigrew quoting from Glass's "History of the Canary Islands," takes from a translation of an ancient Spanish manuscript an account of the manner in which the people of the Canaries preserved their dead. They carried the dead body in a case, stretched it out on a flat stone, opened it, and took out the bowels; then twice a day they washed the porous parts of the body—viz., behind the armpits, behind the ears, the groin, between the fingers, and the neck with cold water. After sufficient washing, they anointed those parts with sheep's butter, and sprinkled them with a powder made of the dust of decayed pine trees, and a sort of brush-wood which the Spaniards called *bressos*, together with the powder of pumice-stone; then they let the body remain until it was perfectly dry, when the relatives came and swathed it in dressed goat-skins, girding all tight with thongs of leather. The body was finally placed in a cave. In some cases amongst the Guanches, the cavities of the body, after being washed with salt water, were made to receive aromatic substances, and the whole body was then dried in the sun or in air artifically heated. The same authority (Pettigrew) records that at Palermo, at the Convent of the Capuchins, the bodies of the monks were all preserved, the skin and flesh by some process of petrifaction, being rendered quite hard, so as to resist decay. These bodies, habited in the clothes they usually wore, were preserved in the standing posture.—*Asclepiad.*

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The Food of the Japanese.—The last issue (Heft 37) of the German Asiatic Society of Japan contains a lengthy paper, with numerous tables of analysis, on the food of the Japanese, the authors being Dr. Kellner and M. Mori. They refer at the outset to the extraordinary differences of opinion amongst various writers as to the exact nature of the staple diet of the Japanese people. One writer says it is almost wholly boiled rice flavoured with small quantities of fish or pickled vegetables; another says that, as far as means allow, it is a mixed, and not a purely vegetable diet, and therefore physiologically ample; a third, that it is almost wholly vegetarian; a fourth, that as much animal food is consumed in Japan as in Germany, Austria, France, and the Danubian principalities; and so on. All the writers here quoted are modern men of science who have resided in Japan, and have therefore had ample opportunities for forming an accurate opinion. As to beef, however (there is no mutton in Japan), there can be no question that its consumption is very small. In 1882, only 36,288 beasts were slaughtered, or about 1 kilogramme of meat per head of the population, and it must be borne in mind that a large consumption takes place at the open ports amongst Europeans, and in the proximity of vessels. The conclusions to which the present writers—one of them, it will be noticed, being a native investigator—come is that the food of the Japanese people varies so considerably that, from a physiological point of view, no single proposition can be laid down respecting it. There are two main groups to be distinguished: in one, the people from poverty are compelled to be vegetarians, and use a diet which leaves much to be desired in its effect in strengthening the body; those in the second group are able to obtain animal food from the sea with some ease, and therefore use a mixed diet, which in kind and quantity appears ample. Between these two extremes we find all kinds of diet. The authors have not only made analyses of the various food-stuffs of Japan, but have investigated in various public institutions, from prisons to schools for army officers, the effect of various classes of food on the labour and weight of different persons.—*Nature.*

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Children Nursed by Wolves.—The *Zoologist* for March reprints an extraordinary pamphlet entitled, "An Account of Wolves nurturing Children in their Dens." This pamphlet was printed at Plymouth in 1852, and has long been out of print. On the wrapper of a copy in the Zoological Library of the Natural History Museum at South Kensington, there is the following memorandum in the handwriting of the late Colonel Hamilton Smith: "This account, I am informed by friends, is written by Colonel Sleeman, of the Indian army, the well-known officer who had charge of the Thugg inquiries, and who resided long in the forests of India." The writer records a number of cases of children who are said to have been nurtured by wolves in India. In one instance a large female wolf was seen to leave her den followed by three whelps and a little boy. This happened near Chandour, ten miles from Sultanpoor, in the year 1847. The boy went on all fours, and ran as fast as the whelps could. He was caught with difficulty, and had to be tied, as he was very restive, and struggled hard to rush into holes and dens. When a grown-up person came near him he became alarmed, and tried to steal away. But when a child came near him he rushed at it with a fierce snarl, like that of a dog, and tried to bite it. When cooked meat was put near him he rejected it with disgust; but when raw meat was offered he seized it with avidity, put it on the ground under his nands, like a dog, and ate it with evident pleasure. He would not let anyone come near him while he was eating, but he made no objection to a dog coming and sharing his food with him. The trooper who captured the boy left him in charge of the Rajah of Hasunpoor, who sent him to Captain Nichollets, commanding the first regiment of the Oude Local Infantry at Sultanpoor; and some interesting notes as to the boy's habits are given on this officer's authority. He died in August, 1850; and after his death it was remembered that he had never been known to laugh or smile. He used signs when he wanted anything, and very few of them except when hungry, and he then pointed to his mouth. When his food was placed at some distance from him, he would run to it on all fours, like any four-footed animal, but at other times he would walk uprightly occasionally. He shunned human beings, and seemed to care for nothing but eating. If the pamphlet can be proved to be perfectly trustworthy, it certainly deserves to be carefully studied by anthropologists.

Consumption.—Dr. Curtis says in the ordinary healthy lungs, perhaps even in persons who have a consumptive heredity, the germ which causes the breakdown of the lungs may not be able to make an impression; but if the physicial integrity is destroyed by poor food, or any debilitating influence, or by cold, then the germ is able to get in its work, and to multiply and produce its kind and fill the lung with tubercles.

Our Bookshelf

"Reading maketh a full man."—*Bacon.*

ANCIENT AND MODERN SANITATION.

On the Sanitary Arrangements of four large Communities differing widely in Surroundings and other Conditions, viz.: the Ancient Hebrew Camp in the Desert, and the modern cities of Manchester, Edinburgh, and Liverpool. By J. B. Nevins, M.D. (London: J. & A. Churchill. 1888.)

This pamphlet, reprinted from the *Liverpool Medico-Chirurgical Journal*, and representing, as to its substance, an inaugural address delivered at the opening of the Liverpool Medical Institution, should attract public notice from the somewhat interesting nature of its contents. The comparison of the sanitation of the ancient Jew, and its strict code of isolation and its rigid enforcement of cleanliness, with the modern policy of hygiene, proves a most fascinating topic in the hands of Dr. Nevins.

The author's reading, research, and observation have evidently been of extensive character. In speaking of the ancient Hebrew laws regarding clean and unclean meat, he remarks, incidentally, that horse-flesh is openly sold in Manchester, and is "chosen by the artisan class in preference to the cheap, rough pieces of ordinary meat, because it is equally palatable, and it looks so much finer in its fibre than the coarse grain of the cheaper portions of ordinary beef."

The Hebrew laws regarding food and feeding are duly noted by Dr. Nevins to merit scientific approval in more than one respect. Thus he remarks that "There is one of the Hebrew laws which is often passed over without notice or thought, which seems, however, to have been a forerunner of a principle that is coming more and more into importance at the present day, viz., the establishment of what is called 'a close season' for a still increasing number of the animals with which we are familiar. The law to which I refer is that which enacts —'If a bird's nest chance to be before thee in the way, whether there be young ones or eggs and the dam sitting upon them, thou shalt not take the dam with the young' (Deut. xxii. 6). The prohibition to take oysters, grouse, and other forms of game during their breeding season has long been familiar, and to these the law has lately added a close season in which it is forbidden to shoot sea-gulls or other wild fowl; but in the Hebrew law under consideration we have this beneficent and useful law extended to all birds, and the wider our experience of the whole of nature becomes, the more wisdom do we find in regulations such as those which maintain the balance of nature, but which in our ignorance have at times appeared to be without meaning or value.

"The strict prohibition of eating blood had also a mixed purpose, being partly sanitary, because blood so rapidly decomposes and becomes unwholesome, but also religious, because the Zabii, whose idolatrous practices prevailed extensively at the time, supposed it to be the food of demons, and believed that whoever ate it acquired by that means some kind of supernatural powers from them. To some even of those Zabii, however, blood appeared so loathesome that when they killed an animal they caught the blood and poured it into a hole in the ground, round which they sat, and themselves ate the flesh in company and good fellowship, as they believed, with the demons who drank the blood; and thus, having in all friendliness sat at the same table and eaten of the same meal, they believed that the demons would appear to them in their sleep and reveal to them knowledge of things otherwise undiscoverable (Maimonides, chap. xxi.). An instructive practical illustration of the sanitary importance of bleeding an animal to death before eating the flesh was afforded some fifty years since in this city, when the late Dr. Carson, a physician of deserved reputation and influence, obtained the slaughtering of some cattle by opening the jugular vein and through it inflating the heart by a pair of bellows. He argued that the carcase would be much heavier by the retention of the blood, and that the meat would be more tender and nourishing; but it was speedily found that the meat looked bad ('full of blood-blotches, like smothered bullock') and would not keep, and proved a loss instead of a gain to the butcher, and after a very short trial of not more than a fortnight the experiment came to an end.*"

The author's remarks on the comparative sanitation of the three cities named in the title of Dr. Nevins' pamphlet, will be perused with interest. On the whole, we are inclined to favour the sanitary system prevalent in Edinburgh, as the most adequate and hygienic of the three. Liverpool sends all its refuse to the sea, and, according to Dr. Nevins, saves 7,000 lives annually by thus ridding itself of disease-producing matter; while Manchester has utilized materials "which have hitherto been almost unmitigated evils." In Edinburgh, the sewage is utilized in irrigation, while a limited pail system and a water-carriage system together dispose of the sewage-refuse satisfactorily and well as regards the public health.

DISEASES OF THE THROAT AND NOSE.

Laryngoscopy and Rhinoscopy in the Diagnosis and Treatment of Diseases of the Throat and Nose. By Prosser James, M.D. Fifth Edition. Illustrated with hand-coloured plates. (London: Ballière, Tindall & Cox. 1888.)

A work which has reached its fifth edition may claim in one sense to have reached a high pinnacle of success. The book before us, in virtue of its authorship and its numerous editions, may be regarded as having attained the rank and dignity of a classic production. Dr. James is well known as one of the greatest authorities on diseases of the air-passages, and his descriptions of the methods to be employed for the diagnosis and cure of ailments of throat and nose are marked by the clearness which long familiarity with such professional details alone can impart. The illustrations form a marked feature of the volume, the hand-coloured plates being carefully rendered, and the woodcuts of the various instruments and procedures being thoroughly trustworthy. The book is of technical nature, and is adapted for the medical practitioner and student. To such it is an essential companion, and a *vade mecum*, without which a medical library would be very incomplete.

SCIENCE AT HOME.

Home Experiments in Science for Old and Young. A repertory of simple experiments with home-made apparatus. By J. O'Conor Sloane, E.M., A.M., Ph.D. With 97 engravings. (London: Sampson Low & Co. 1888.)

This is a book which should become a prime favourite with teachers of physical science, and with students who

"* Mr. Gillespie, meat inspector, Public Abattoirs, Liverpool, and an old man named Naylor, who assisted in the slaughtering, gave me this account, which amplified my own recollection of the experiment."

are intent on mastering in an easy fashion the experimental details of physics. The substance of the work originally appeared in the *Scientific American*, but the republication of Dr. Sloane's papers in volume form was more than justified by the high character of the educational aims he had in view, as well as by the excellence of his prelections. This volume, in the hands of an intelligent student, will do more than educate in the elements of natural philosophy. It will teach him manual dexterity in the construction of the apparatus he uses, while it will also familiarize him the more exactly with the conditions of successful experimentation, and thus impart a practical knowledge of physics. The details describing the experiments with soap-bubbles are among the most fascinating parts of the work. The introductory chapter on "Mechanical Operations," and that on "Lecturing," contain admirable pieces of advice and instruction which teachers would do well to follow.

Novel Cure for Sciatica.—Enveloping the affected limb in a coating of flour of sulphur for one night is said to cure sciatica; the urine the next morning is said to smell strongly of sulphuretted hydrogen. The skin should be thoroughly cleansed first.

Anti-Scorbutic Elixer for the Gums.—Red cinchona bark, one and a half ounces; guaiacum chips, two and a half ounces; pellitory root, one and a half ounces; orange peel, half an ounce; cloves, two and a half drachms; gum benzoin, one drachm; French brandy, sixteen ounces. Bruise all the ingredients, and macerate for fourteen days, and filter. A teaspoonful in a wine-glassful of water. Rinse the mouth, and brush the teeth and gums.

A lad at Easton, Pennsylvania, entered a drug-store, bottle in hand, and said he wanted ten cents.' worth of "armakymony." The druggist told him to repeat the word, and said, "Don't you mean arnica or ammonia?" "I dunno," was the reply. "What is it for?" asks druggist. "Can't tell," said boy, starting slowly out. When near the door a bright idea illumined him, and he turned and asked druggist: "If your wife hit you on the head with a chair-leg, which of them medicines would you git to take the swellin' down?" "Arnica." "Then fill her in ten cents.' worth," replied the boy; and he gazed lovingly at a big stick of licorice as the arnica was being bottled.

Electrical Ice Cream Poison.—Dr. George S. Hull, of Chambersburg, Pa., advances the theory that ice cream poisoning is due to chemical action which takes place in the ice cream freezer, and which dissolves the zinc. He demonstrated his theory by means of a galvanometer. In conducting the experiments, the doctor connected the zinc, paddle, and tin can by means of a copper wire with a moderately sensitive galvanometer introduced in the circuit. He first experimented with pure cream, which deflected the galvanometer seven degrees at freezing point, thus showing that some slight solution was taking place, and proving that if pure cream caused a deflection of seven degrees, the other ingredients of ice cream would probably cause more, and in such case sufficient zinc would be dissolved in the ice cream as ordinarily made as would make it decidedly dangerous as a delicacy. The deflections caused by various other substances used were: Half cream and milk, 25 degrees; pure milk, 45 degrees; one-half cream, half milk, sugar and vanilla flavour, 58; the same mixture with corn starch, 44; the same mixture with eggs, 80.

IMPORTANT ANNOUNCEMENT.

COMMENCEMENT OF A NEW VOLUME OF "HEALTH."

Health, as our readers are aware, may be obtained of all Booksellers and Newsagents, and at the Railway Bookstalls, on the day of publication. It may also be ordered from the Publisher, 2, Paternoster-square, London, E.C., who will send the journal, post free, for a year, on receipt of postal orders for 10s. 10d.

As many of our readers who live in remote districts prefer to obtain Health from the Publisher direct, and as we are desirous of increasing the already large number of subscribers who give us a yearly order for the journal, we take the opportunity afforded by the Commencement of a New Volume to offer the following Free Gifts and Bonuses to all who subscribe to Health for one year or longer, on and after Friday, April 6th, when the first number of Volume XI. will be issued:—

(1.) To each Subscriber who remits 10s. 10d. to the Publisher, entitling him (or her) to receive one copy of Health, post free, for one year, we shall present a copy of Dr. Andrew Wilson's work, entitled "A Manual of Health Science" (Longmans & Co.), value 2s. 6d.

(2.) To each subscriber who remits 21s. 8d., entitling him or her to receive two copies of Health weekly, post free, for one year (or one copy for two years), we will present Dr. Richardson's "Ministry of Health" (Chatto & Windus), value 6s. The copies of Health so ordered may be posted to separate addresses.

(3.) To each person who subscribes 32s. 6d., for three copies of Health, post free, weekly, for one year, we will present the volume by Dr. Richardson mentioned above, and also the handsome, illustrated book entitled, "Studies in Life and Sense," by Dr. Andrew Wilson (Chatto & Windus), value 6s.—being a free gift of the total value of 12s.

The bonus last mentioned will be presented to anyone who succeeds in obtaining three yearly subscribers to Health, and who remits to the Publisher the sum of 32s. 6d., together with the names and addresses of the persons to whom the copies are to be posted each week.

As the literary gifts above-mentioned constitute books containing solid and reliable information regarding health and other matters of popular scientific interest, it will be seen that the above scheme, while intended to increase our already large circulation, also offers distinct advantages to new subscribers who guarantee by their subscriptions a year's support to this journal. All communications regarding subscriptions and other purely business details connected with Health should be addressed directly to the Publisher, 2, Paternoster-square, London, E.C., and *not to the Editor*.

The *Union Médicale* publishes the following recipe for getting rid of gnats:—"Pour a small quantity of a 2 per cent. carbolic acid solution into a saucer. Dip the finger into the liquid and sprinkle sheets, coverlid, pillow, and bolster on both sides, the edges of bed curtains and the wall next the bed. The face and neck may also be slightly wetted with the solution. Not a single gnat or mosquito will approach, and a comfortable night's rest may be counted upon without fear of molestation." This recipe may be useful in hot climates, if the smell of carbolic be not considered almost worse than the gnats and mosquitoes.

Our Letter-Box

"Conference [maketh] a ready man."—*Bacon.*

NOTICES TO CORRESPONDENTS.

All Communications for the Editorial Department (including Books for Review, Specimens of Sanitary Appliances, &c.), to be addressed to "The Editor of Health," 2, PATERNOSTER-SQUARE, LONDON, E.C. *Those intended for the Publishing Office to be sent to* Mr. A. P. Watt, The Publisher, *at the same address.*

LETTERS TO THE EDITOR.

COOKERY AND HEALTH.

Sir,—I was much interested in reading the article by Dr. Crespi in your last issue regarding the need for better and more systematic instruction in cookery. I agree with him that cookery is much more of a science than most persons suppose. To attain success in culinary matters requires an amount of study and practice which few well-to-do persons, and a still fewer proportion among the masses, will or can afford apparently to bestow upon the matter. The demand for better cookery was answered some years ago by the institution of cookery-classes in most great towns and cities; and I learn that one of the most energetic of our English teachers of cookery—Mrs. Thwaites, of Liverpool—is in the habit of making professional tours for the purpose of instructing classes in towns and villages in this most necessary art. My object in addressing you on this topic at present is that of advocating the institution in our educational systems of a graduated system of instruction regarding food and its preparation. Dr. Milner Fothergill has been unwearied in his efforts to induce medical schools to adopt a course of instruction in Dietetics as part and parcel of their curricula; and what he urges as necessary for the doctor's training, I argue is equally necessary for the education of girls to become good housekeepers and economical wives. By the principle of getting rid of some things in our educational system which might well enough be spared from the culture of the masses, I would make room for first of all a discreet training in physiology. This science is, of course, the basis of all health-teaching. It is also the foundation of successful culinary science. The pupil is taught the nature of food, why it is required at all—a point I have heard you, Sir, illustrate felicitously in your "Combe" Lectures—its chemical composition, the differences between nitrogenous and non-nitrogenous foods, and the part each food plays in the nutrition or work of the body. These topics all possess a distinct bearing on the preparation of food, and the preparation of a *menu*. For unless a cook understands clearly why, for example, butter sauce goes well with white boiled fish, but is unadapted for salmon, his practice must of necessity be largely of that rule-of-thumb nature which is to be decried in any study or trade. The very combinations of our foods—the adding of butter to bread, of oil to salad, of fresh vegetables to salt foods—are all details of practice founded on an appreciation of the physiology of foods to begin with. Thus I would make a knowlege of the science of food a necessary preliminary to all instruction in cooking. Thus armed, the pupil would go on to her cookery-lessons with a fair chance of understanding intelligently the principles on which food is to be prepared for the table. In addition, such a scientific basis for cookery-lessons would enable the pupil to understand more of the chemistry of cooking operations than is at present appreciated by the majority of girls. If the science of physiology, as you have so often argued in Health, became a universally taught branch of education, special stress being laid on the teaching about foods, we should not only hear less about intemperance and food-waste, but should benefit directly in the way of arriving, as Dr. Crespi desires, at better things in the way of well-cooked meals for all classes.—I am, Sir, Yours &c.,

A Matron.

ARCHITECTS, SURVEYORS, AND ENGINEERS' REGISTRATION BILL.

Sir,—This bill, which has been read the first time in the House of Commons, is of such general interest and importance, that I hope you will allow me to say a few words respecting it. It is said that very many members of the medical profession, as well as others, are giving it their support on the ground that it will protect the public against incompetent architects and all their insanitary work; whilst affording to competent architects a legal status and protection which they do not at present enjoy. The principles set forth in the petitions drawn up in favour of the bill are admirably and attractively set forth; but when we come to the bill itself, it practically provides for little more than legalized incompetency, and it is simply impossible to believe that medical men, especially, can have any idea of its real scope. They may fancy, perhaps, that it is promoted by the three great chartered representative bodies of the professions named, and that the other societies scheduled as admitting members to the privileges of registration really possess such an educational status as to justify their issuing their own fiat for the granting of a diploma. But, so far from this being the case, it is only the legitimate principles of the medical acts of Parliament which have been imitated, without any of their legitimate authority or safeguards; and in its present form the measure will work much mischief, if it should pass into law, by putting these professions into a false position.

My name has, by non-professionals, been sometimes confounded with that of my namesake, the Secretary of the Royal Institute of British Architects; and, as his name has appeared on several occasions in reference to this matter, I think it well to add that we are in no way connected with each other. I am glad to believe, however, that we are of one mind upon this important subject.—Your obedient servant,

William White, F.S.A.

30*a*, *Wimpole Street.*

QUERIES AND ANSWERS.

REPLIES: GENERAL, SANITARY, AND MEDICAL.

[Readers of Health will kindly note that when back numbers of the journal are desired, the letters containing such requests and stamps for the numbers should be addressed to the Publisher of Health, 2, Paternoster-square, London, E.C., and *not to the Editor.*]

J. M.—You will find such recipes given on the outside of the packages which contain Marshall's Tritola or W. Polson's Corn Flour. Any cookery-book will also supply you with the information.

Elizabeth.—What you name indicates need for rest when the symptoms you mention trouble you. We should also recommend you to foment the parts with poppy-head fomentations, and a little prepared Fuller's earth (to be had from any druggist) should be dusted on the parts after bathing them. If these means do not suffice to cure you, write again.

NERVOUS EXHAUSTION.

PULVERMACHER'S World-Famed GALVANIC BELTS for the Cure of Nervous Exhaustion and Debility, have received testimonials from three Physicians to Her Majesty the Queen, and over Forty Members of the Royal College of Physicians of London,

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Dr. Vines, Fellow of the Royal College of Physicians, writes 19th September, 1885: "Having used MR. PULVERMACHER'S BELTS for many years, in the course of medical practice, I am in a position to speak of their great value as a curative agent in cases of nervous disease or functional malady where Electricity is likely to be serviceable. I am entirely convinced of their efficacy."

Dr. C. Handfield Jones, F.R.C.P., F.R.S., Physician to St. Mary's Hospital, says: "I am satisfied that MR. PULVERMACHER is an honest and earnest labourer in the field of science, and I think he deserves to meet with every encouragement from the profession and scientific men."

Dr. Golding Bird, M.D., Physician, Guy's Hospital, says: "I can hardly recommend MR. PULVERMACHER'S INVENTION too strongly to the notice of my medical brethren."

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GALVANIC ESTABLISHMENT,
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R. Johnson.—First of all, look to the ventilation of your bedroom and see that this is well carried out. Symptoms like yours often arise from foul air breathed during sleep. For the rest, we advise you to take open-air exercise, as this will tend to aid assimilation, but it appears to us that you eat too heavily; and your meat-supper at 8 p.m. may be the cause of your sleeplessness. Give up the latter meal altogether, and at bedtime, on alternate nights (for a few nights), try the effect of taking twenty grains bromide of potash dissolved in a wineglass of water. If this advice does not cure you, write again.

W. R——D.—You would benefit equally if you took a teaspoonful of Syrup of the Hypophosphites in a wineglass of water after your meals twice daily; or if this did not agree with you, you could substitute twenty drops of the tincture of perchloride of iron, to be taken in half a tumbler of water, after meals.

L. A.—Write to Mr. Van Abbott, of Princes-street, Cavendish-square, for his list of foods for diabetic patients. This list will give you at a glance the information you seek.

Foley.—You may with perfect safety take Cascara Cordial in doses of twenty drops in water, between meals, once or twice daily. Eat stewed fruits, vegetables, and whole-meal bread, and avoid tea and coffee.

Mary L.—Eggs may be preserved by being rubbed over with linseed oil, to exclude the air. Jayne's liquid for preserving them is made by taking a bushel of lime, two pounds salt, half a pound cream of tartar, and water enough to form a liquid in which the eggs will float.

Faber.—Let the patient take twenty drops Cascara Cordial once or twice daily in water, an hour before food; diet to be light, and rest to be taken after meals. To take aperients, as has been done, is a vital mistake. The Cascara Cordial will probably effect a cure, and thereafter let stewed fruits, Scott's Oat Flour, whole-meal bread, &c., form part of the food.

P. M. B.—From nine to ten months. Your best plan is to procure Dr. Joll's book on "Nursery Hygiene," or Miss Jex Blake's "Manual of Infancy" (Macmillan), or Dr. Weatherley's "Young Wife's Own Book" (Griffith & Farran), and study what is said therein about the feeding of infants.

Nota Bene.—Apply to the French Hygienic Society, 56, Conduit-street, London, W., for information respecting harmless hair-dyes.

Bald One. — Use the following:—Bay rum, two ounces; glycerine, two ounces; tincture of cantharides, one drachm; oil of bergamot, half a drachm; sulphate of quinine, ten grains; water, four ounces. To be used every morning, and to be rubbed into the roots of the hair, all other oils and pomades being avoided. Use a soft brush only, and wash the hair once in a week or ten days, at night, with Bayley's Soap and tepid water.

Potter's Bar.—Superfluous hairs can only be satisfactorily removed by electrical means. Read the article on this subject in Health, No. 149. We can send, if desired, on receipt of stamped addressed envelope, address of a specialist who removes hairs in this way.

J. P.—Try the following ointment, which in psoriasis has been used with good effect:—Chrysophanic acid, one drachm; lard, one ounce. Mix. Label: "A small piece, about the size of a pea, to be rubbed into each patch of the disease daily." In some cases in which the ointment has been applied to one side of the body only, the other extremities being wrapped in wool, the disease was wholly cured.

Charles M.—Wash the affected parts with Unna's over-fatted Soap only till you are well, and apply the following paste night and morning:—Resorcin, one drachm; lanoline, vaselin, zinc oxide, and powdered starch, of each two drachms. Mix, to form a paste.

Chemical.—In Marsh's test for arsenic there is employed the apparatus for producing hydrogen gas by the action of sulphuric acid on zinc. The paper or other object to be tested is placed in this vessel, and the hydrogen given off is burnt, a clean porcelain plate being used to receive the flame. If arsenic is present, it is deposited on the porcelain.

Polly M.—Try bathing the face morning and night with light white wine; or use the following lotion:—Sulphate of zinc, two grains; compound tincture of lavender, eight minims; distilled water, one ounce. Apply two or three times daily.

L. P.—Use thrice daily an injection made by adding a teaspoonful of Condy's Fluid to half a tumbler or so of tepid water. Take no alcohol; rest as much as possible, and let your diet be light. A little Lamplough's Pyretic Saline taken occasionally in the morning will also aid your cure.

Opportune.—The following is a safe and excellent cough mixture:—Chlorodyne, one drachm; ipecacuanha wine, one drachm; syrup of squills, one drachm; glycerine to make up two ounces. Label: "A teaspoonful in a little water at intervals."

A HUMAN FIRE.

A few years ago one of the most important coal-mines in Wales caught fire. It started slowly, but soon obtained such headway that it spread through the greater portion of the entire mine. To flood it with water would extinguish the fire, but well-nigh ruin the mine. Finally it was suggested that all the entrances and vent-holes of the mine be covered, thus shutting off the supply of air. This was done, and the flames finally died out.

To compare the condition of this mine with many phases of the human system is most natural and appropriate. "Fire in the blood" is not a mere expression, it is a most serious fact. How it originates it may be impossible to say; but that it burns and rages with an increasing fury the one who is its victim only too painfully knows. "The blood is the life." It is designed by Nature to purify, strengthen, and sustain the system. It is too often made the channel through which poison and death are transported. Poisonous acids coming through the veins and arteries inflame and cause a fire, just as real as the one which existed in the mine. They burn and irritate, causing the brain to become weak and the nerves unstrung; they carry pains to the muscles, and leave agonies in the joints; they devastate the very portions of the body that most require help, and they hasten the approach of death in its most horrible form.

There is but one way by which this fire in the blood can be extinguished, and that is by shutting off the supply of these poisonous acids. The lactic, lithic, and uric acids come into the blood through the kidneys and liver, and remaining in solution, produce inflammatory rheumatism, sciatica, lumbago, neuralgia, gout, and all rheumatic fevers and affections. All these troubles are painful, most of them dangerous. To cure them the fire in the blood must be extinguished, the supply shut off. This can only be done by guarding the portals to the blood—the kidneys and liver—and no means has ever been found for accomplishing this which can equal Warner's Safe Cure and Warner's Safe Rheumatic Cure, taken in alternate weeks, in doses as directed on the bottles of each. These remedies act directly on the seat of the disease. They dissolve the poisonous acids, and at the same time strengthen the kidneys and enable them to throw off all the waste of the system.

No better evidence of the efficacy of this wonderful preparation can be desired than the voluntary statements of the following persons, who have suffered, and been freed from their misery by their use:—

Mrs. Edward Taylor, 48, Alvin-street, Gloucester, suffered, more or less, for ten years from rheumatic fever. She was so ill that she was unable to retain the slightest particle of nourishment, and had quite made up her mind that she must die. A friend advised Warner's Safe Cure and Warner's Safe Rheumatic Cure, and they were given a trial. We give the result in Mrs. Taylor's own words: "I found nothing so beneficial. Under the Safe Cure I gained flesh and strength, and am to-day enjoying a state of health to which for many years I had been a stranger."

Mr. F. J. Lightfoot, 20, Bucklersbury, London, E.C., suffered for months from a severe attack of muscular rheumatism. He says, "I was so bad that I could walk with the greatest difficulty. I tried all kinds of embrocations, but without getting relief. I took a few bottles of Warner's Safe Cure, which acted in a marvellous manner, subdued the pain, and I am now as well as ever."

Colonel Frank Hanley, 100, Warwick-street, Belgravia, London, S.W., says: "Gout is hereditary in our family, and I have been a martyr to it for twenty years. I have been so eaten up by this disease that I was a perfect misery to myself and everyone about me. I could get no relief from the usual methods of treatment, and my medical man finally told me to try Warner's Safe Cure. I used some twenty bottles of the medicine; the swellings in my feet subsided, and I have not had the slightest indication of gout since."

Testimony like the above must convince the most sceptical that Warner's Safe Cure is quite equal to all that is said of it. If you still doubt, write the parties, enclosing stamp for reply. Warner's Safe Cure can be had of all chemists and medicine-vendors at 4s. 6d. per bottle, or of H. H. Warner & Co., 86, Clerkenwell-road, London, E.C.

Z. E. B.—The best treatment for boils is by means of the following:—Sulphide of lime, twenty four grains; sugar of milk, half an ounce. Mix; and keep in a stoppered bottle. Take as much as will cover a sixpence every four hours.

A. Fairly.—Give the Dahl's Cakes a fair trial. They are invaluable in cases of constipation, &c.

A. Marsden.—Read Dr. Hood's book on "Gout and Rheumatism," published by Messrs. Churchill, 11, New Burlington-street, London, W., and you will find all the information you seek given therein.

E. B.—Dr. Hincks Bird's plan of ventilating a room, which has been repeatedly described by us, is as follows:—Place a piece of wood about four inches deep along the sill of the window, so that the lower sash may rest exactly upon it. In this way, by raising the lower sash of the window above the upper sash at the middle—the upper sash not being disturbed—air comes in between the two sashes, and no draught is caused.

J. Grant.—It is evident from your letters you are in a highly morbid state of mind. You were only replied to in last week's number. We cannot undertake to advise you further at present. If you are so unsettled in your mind, why not consult a leading physician in your city?

Enquirer.—You may give the remedy named a trial. Use it as directed, and note its effects carefully. We shall be glad to hear your experience regarding it after a week's trial. Kindly favour us with a reply after that interval.

G. A. H.—1. Try the powder recommended to "Porter" in Health, No. 257. 2. Do not take either tea or coffee just after dinner. It interferes with digestion. 3. Try inhaling Stern's Pumiline (see description in Health, No. 252) at night. This will also act as a capital astringent. 4. Yes: Ward's is lighter and warmer. 5. Tepid water and brisk friction thereafter would do no harm. Cold water might be too severe a measure.

An Appreciative Subscriber. — Primarily, we think you are wrong to discontinue porridge. There can be no harm in taking it, and it is probable a return to oatmeal would benefit you very much. For the constipation try Dahl's Cakes (taken with tea or coffee in the morning) as advertised in our pages, and eat stewed fruits and vegetables. Twenty drops of Cascara Cordial taken between meals in water is the safest aperient and one not likely to cause any untoward effect. The habitual use of any aperient is bad. Avoid much tea and coffee, and alternate Scott's Oat Flour with porridge morning and night. For piles, try Bayley's Remedy (17, Cockspur-street, Pall-Mall, London, S.W.): if this does not suffice for a cure, write again, and we will recommend other measures.

Julia F.—Avoid hard brushes and combs, and wash the head once a week with Bayley's Spermaceti Soap and tepid water (17, Cockspur-street, Pall-Mall, London, S.W.); at night rub into the affected parts a little glycerine of borax. If not cured by these means, write again.

Organist.—Read the pamphlet "A Lecture to Young Men" (post free, for 1s. 1d., from Mr. Renshaw, 356, Strand, London, W. C.), and note what is said therein regarding diet and tonic remedies for cases like yours. Glad to advise again, if you are not bettered by this advice.

Endymion.—No: it only indicates some little disturbance of digestion, and is not important. Eat less butcher meat, and drink a tumbler of hot water at bedtime. Vichy Water taken occasionally through the day will also aid you. Avoid eating excess of potatoes and other starchy vegetables.

A. S. H.—Read the pamphlet recommended to "Organist" above, and note what is there said regarding diet and the use of Cascara Cordial. Note, also, advice given to "An Appreciative Subscriber" above regarding food, &c. Rest after your meals, and take Scott's Oat Flour in place of tea and coffee for a time. The powder recommended to "Porter" in No. 257 Health should also be tried. Glad to advise again, if necessary.

Lucinda.—1. We cannot recommend the ear-appliances you name. Consult a reliable ear-surgeon. We can send you address of such if you attend to Rule No. 4 to Correspondents given above. 2. For ringworm, paint the affected spots carefully with *sulphurous* (*not* sulphuric) acid, which should be fresh and pure. See that the hairs next the affected parts are thoroughly removed.

A. M. Z.—[You omitted to stamp your letter—kindly remit 2d. to the Publisher.] 1. Follow advice given to "Julia F." in the present number. 2. Use Beetham's glycerine and cucumber lotion. 3. Have them extracted. 4. The system is a reliable one.

Frigid.—Why not try the plan of wearing a flannel belt round the loins? Apply to Messrs. Lindsey & Co., 32, Ludgate-hill, E.C., and have a belt made to fit you accurately and comfortably — mention Health as your reference, please. You only suffer from a local weakness, which will probably yield to above treatment. In addition, rub a little Bow's Liniment on the parts at bedtime each alternate night. If not relieved, write again.

B. D. E.—We do not see anything remarkable in what you mention. It may be that your normal temperature is slightly higher than is usual in most other persons. That is the only explanation we can give you. Of course, we are assuming you are perfectly well, and complain of no ailment.

An Old Subscriber.—See advice to "Endymion" in the present number. The Vichy Water should cure the last-named symptom, along with attention to diet—as indicated in advice above. A dessert-spoonful of Scott's Pure Cod Oil Emulsion should be taken after meals. Note whether you are losing or gaining weight.

R.—See advice given to "An Appreciative Subscriber" above, and use the Cascara Cordial, Dahl's Cakes, and diet therein noted. The Dahl's Cakes should be of service to you. If not cured, write again.

R. G. H.—The number of Health you require can be obtained from the Publisher, 2, Paternoster-square, London, E.C., by your sending 2½d. in stamps.

Hopeful. — Simply continue the Fer Bravais at intervals for a week or two. You may then cease taking it altogether. You only want a little bracing up, and this the tonic will effect.

Enquirer (Blackpool).—1. Be careful in your diet and avoid excess of beer or other forms of alcohol. Try the mixture recommended to "T. Gill" in Health, No. 257: and if not cured, write again. 2. For bronchitis, the patient might with safety try the remedy you name. We approve highly of Stern's "Pumiline" for inhalation. See a description of this remedy in Health, No. 252. The system should be strengthened by generous diet and all chills should be avoided.

Saturn. — Read the pamphlet recommended in the present number to "Organist:" and learn therefrom that what you name is an exceedingly rare ailment, although it is one made much of by quacks for purposes of extortion. What you name will probably be cured by your giving up alcohol for a time, and by your taking Vichy Water regularly thrice daily, as a beverage.

C. W. B.—Use Howie's filter with the porous clay, iron, and charcoal filtering media.

Roy.—We will adopt your suggestion and write on the subject you name. As far as we can see, marmalade should agree perfectly well with you. The lemon drink you used could have no lowering effect. For one thing the small quantity taken could produce no such result as that you indicate. You should remember that a bilious person may at one time take articles of food which at another time are unsuitable. Generally speaking, eat white boiled fish and farinaceous foods in preference to butcher meat. Vegetables should also be freely partaken of. The Cascara Cordial, as ordered to "Foley" in the present number, or a dose of Lamplough's Pyretic Saline, may ward off an attack of biliousness if taken early enough.

Sufferer.—It is clear you do not attend to the ordinary rules of cleanliness. Wash the parts night and morning regularly with soap and water, and you will not suffer from the irritation you name.

A. D.—To make a shampoo liquor in bulk, take of Rum, three quarts; spirit of wine, one pint; tincture of cantharides, half an ounce: carbonate of ammonia, half an ounce; and salt of tartar, one ounce. Rub on a little of this mixture and thereafter wash off with water. A piece of quillai bark stirred in water till a lather is produced: this fluid, used for the hair, makes a good wash.

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"(Signed) J. CRAWSHAW."

Lumbago.

Mr. J. B. CARNE, Station Master, London, Brighton, and South Coast Railway, Clapham Junction Station, S.W., writes:—"April 7th, 1887. I beg to thank you very much for the great benefit that I have derived from wearing your Electropathic Belt which you sent me some months ago. I used to suffer with Lumbago and pains in the back, both of which have now ceased. I have highly recommended the treatment to many friends."

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Rev. D. SUTCLIFFE, Vicar of Holme, Burnley, Lancashire, writes:—"Sept. 7th, 1887. I am bound to style myself your grateful patient, as, since the return of my appliances, my health has improved very satisfactorily, and I am now entirely free from the Constipation I used to suffer from so severely."

Pains in Back.

The Rev. R. ANTRIM, Vicar of Slapton, King's Bridge, South Devon, writes:—"I am deriving great benefit from the Electropathic Belt recently had of you. The pain across the loins has quite left me; my nervous energy is greatly augmented."

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Gross Feeders. By Dr. W. Curran. See page 376.
A Chat on Cookery. By Dr. A. Crespi. p. 378.
How we Sing. p. 387.

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HEALTH

A WEEKLY JOURNAL OF

DOMESTIC AND SANITARY SCIENCE.

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EDITED BY DR. ANDREW WILSON, F.R.S.E. &C.

Vol. X.—No. 258. FRIDAY, MARCH 16, 1888. [Price Twopence. *Registered at G.P.O. as a Newspaper.*

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HEALTH

EDITED BY

DR. ANDREW WILSON, F.R.S.E., &c.

LONDON: *FRIDAY, MARCH* 16, 1888.

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Notes by the Way

BY THE EDITOR.

"Health is the foundation of all our physical happiness."—*Herder.*

IT seems that unusual takes of conger eels have of late been obtained in the English Channel, and the cold weather is supposed to account for the appearance of the conger in enormous numbers off Folkestone. It may be doubted whether many people will benefit by the abundance of this fish. Conger, though prized in France, is not popular in England as an article of food—possibly because soup is the best thing that can be made out of him. Unfortunately, soup is not highly valued in the average English household; perhaps fish soup is of all soups the one that is least regarded. Yet, out of conger there can be made a soup so nutritious that it has no rival save that which is made from turtle. If the truth were known it would probably be found that no small part of the turtle soup served at public dinners is even now made from conger. Consumptive patients might do worse than try conger soup.

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WHAT has been called electric "sunstroke" has of late been investigated by M. Defontaine, doctor in chief to the Creusot Steel Works, in a paper read before the French Society of Surgeons. He states that workmen employed in operating the electric forges at Creusot are subject to a form of sunstroke, which he attributes to the intense light radiated from the focus of the forge. Ordinary arc lamps are incapable of producing such effects, as the light is not sufficiently intense, but these forges emit a light of more than 100,000 candles from a few square centimètres of surface, producing on men exposed to their glare physiological consequences previously unheard of.

✣ ✣ ✣

FREQUENTLY, after two or three hours' work, the men complain of pains more or less intense in the neck, the face, and the forehead, simultaneously with which the colour of the skin is changed to reddish brown. Further, in spite of the precaution taken by the men of shielding their eyes with dark glasses, the retina (or nervous network of the eye) is affected to such a degree that for some minutes after ceasing work the operatives are totally blind to all objects illumined with common daylight, nor is perfect vision restored till nearly an hour after. The conjunctiva, or white of the eye, is irritated, and remains in a state of congestion for forty-eight hours, and this is accompanied by a painful feeling, as of some foreign body introduced under the eyelids.

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THE secretion of tears is augmented, a constant flow being kept up for twenty-four hours, during which the patient suffers from insomnia, due to pain and the abnormal flow of tears, and possibly also to fever. During the following days the skin peels off the face and neck, which become of a deep red colour, fading away about the fifth day. In cases of ordinary sunstroke, heat may have some influence, but in those considered above, the whole effect is due solely to the action of an intense light.

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SACCHARIN, the new substitute for sugar, is being largely used by people unable to take ordinary sugar on account of special ailment. A correspondent writes that "Sugar being a prohibited article to me, I naturally became interested in Fahlberg's "saccharin," and, obtaining a supply as soon as possible, began experimenting with it. Using it alone to sweeten lemon-juice or stewed cranberries, I found it very difficult to mix and tried various plans to remedy it, all of which had some drawback or other until I thought of dissolving it in glycerine. I found that for general purposes the formula of glycerine one pound, saccharin one drachm, heated to solution was the best. Two teaspoonfuls of above to the juice of one

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AT THE
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lemon made (up to eight fluid ounces makes a lemonade sweet enough for almost any one, and three teaspoonfuls to four ounces of stewed cranberries makes a dish "fit for a king."

✣ ✣ ✣

I gave a sample of above to a gentleman to whom sugar was tabooed, and who was then using saccharin alone, and asked him to try it with cranberries and report. When next seen he said very enthusiastically, "That's splendid. I've bought a barrel of cranberries, and would not go back to sugar if I could." The advantages of the mixture over pure saccharin are: That the glycerine gives it a body, and the mixture very closely resembles in taste and appearance the best white honey; that it dissolves readily in water, milk, tea and coffee, wines and liquors; and that it can be very readily measured. To those forbidden the use of sugar, I would advise the use of the above.

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Regarding the efficacy of vaccination and revaccination, the *British Medical Journal* remarks that the report by Dr. Sinclair White of the history of the small-pox epidemic in Sheffield from its commencement in March last up till the end of last year furnishes some very striking and instructive figures which ought to convince even the most obstinate opponents of vaccination of the unwisdom of their course. Thus it appears that ninety per cent. of the people of Sheffield being vaccinated and 10 per cent. unvaccinated, 97 deaths only occurred amongst the 2,198 vaccinated persons who were attacked, and 157 among the 382 unvaccinated persons who were attacked, the death-rate among the vaccinated being 4·4 per cent., the death-rate among the unvaccinated being 41·3 per cent.

✣ ✣ ✣

This, however, relates to the whole population, including those who, not having been revaccinated, had in adult age lost the protection which revaccination would have afforded, and were but imperfectly protected. If the cases of children under 10 years of age be examined the result is still more striking. Of the 100,000 children in Sheffield, 95,000 were officially reported as vaccinated, and 5,000 as unvaccinated; among the 95,000 vaccinated children there were only 2 deaths, and among the 5,000 unvaccinated there were 70 deaths. It should be noted that in the outbreak of 1857-8, when vaccination was practically voluntary and not compulsory, the figures were exactly reversed. There were 179 deaths among children under 10, and only 11 deaths among the whole population above that age.

✣ ✣ ✣

I am asked to announce that a course of five lectures on "Domestic Hygiene" has been jointly arranged by the councils of the Parkes Museum of Hygiene and the National Health Society. Dr. A. T. Schofield will be the lecturer, and the lectures will be delivered at the Parkes Museum, 74A, Margaret-street, at 3 p.m., on the following dates: March 14, 16, 21, 23, 28. The subject of the last lecture (March 28th) is "Home Nursing," when demonstrations (clinical) will be given by trained Hospital nurses. An examination will be held when the course is completed (after Easter), and H.R.H. The Duchess of Albany has, I hear, consented to present the certificates to the successful candidates. Dr. Schofield is well known as a popular lecturer who has the gift of imparting useful knowledge in a pleasant and easily intelligible form. The course is an attractive one, especially for ladies, and will no doubt prove a success.

Original Essays

"Life is not to live, but to be well."—*Martial.*

GROSS FEEDERS.

By Dr. W. Curran.

Dr. Brewer asks, in his "Guide to English History," p. 42, "What were the *domestic habits* of the Anglo-Saxons?" and he answers this question as follows:—"The Anglo-Saxons were gross eaters and drinkers; they lived chiefly on pork and fish and drank large quantities of ale and mead"—and very good food and drink these same substances were. How far this grossness of theirs contributed to their success in arms, as well as to those other triumphs, domestic and otherwise, which they achieved, I need not here stop to inquire. Suffice it to say that their history is by no means an inglorious one, and the "Anglo-Saxon stock or blood" is a phrase that is still used, not without some self-glorification, in our own day. They held their own against many a foe, and during troubled times, till they and their Norman conquerors were so fused together as to be undistinguishable in time in this island, and it will be unnecessary for me, an outsider, to recall to their descendants the further incidents of their history or remind them of the glories of that flag that "has braved a thousand years the battle and the breeze." But they are not likely to forget these, so that I need go into no further recapitulation of them, and "Rule Britannia" is, I believe, still a national, as well as a very popular, air in this country.

"Food is required by the body," said the late Edward Smith, "for two chief purposes—viz., to generate heat and to produce and maintain the structures under the influence of life and exertion," and "it is a matter of general belief," said the late Edmund Parkes, "that more food is taken in cold countries than in hot." So is more food required by those who work hard than by those who merely walk through life, without so much as caring, like other Gallios, for any of these things; and it is generally understood that those who talk much or think deeply require or consume considerable quantities of good, nutritious, and withal easily-digestible food. Be that, however, as it may, and I am not speaking here as a physiologist or as a physician, but simply as a man and a brother, food is as much the father of the individual consumer as the boy is the father of the man, and the preference for, or prejudice against, certain articles of it, we hear so much of, is often as much a matter of locality and climate (and, it may be added, of necessity and early training) as the religion we profess or the coat we wear. The former is, it is to be feared, with many of us little, if anything, more than a geographical accident, a question of birth and breeding, while the latter is "growed," as Topsy would say, anyhow or anywhere, on the mountains of Wales, in the glens or straths of Scotland, in the swamps of Louisiana, or under the looms of Serinuggur and Astracan.

Per contra, and looking to the ice-bound shores of the Polar Sea, we find a very different state of things. Here we

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find the shivering savage struggling, not only with the elements, but also with his neighbours for a mere subsistence. His weapons are the mere products of his own or his father's skill; they are generally rude and inferior, and he has to resort to stealth or stratagem to turn his rude armament to any profitable account. His wits may be sharpened by these struggles or encounters, at the expense of his physical appearance and contour, but his rest must be, at the same time, broken, while his wants often remain unsatisfied altogether, and we find accordingly that he remains, as a rule, a melancholy specimen of his species.

As his supplies are, at the best, scanty and uncertain, he must drop his squeamishness, if ever he had any, and take whatever comes first to hand. Hence his voracity, and we have already seen that fat is indispensable to him. He must, in short, put by what he can when he gets it and starve in the meantime. He must also stow away vast masses of whatever comes first to hand, to enable him to "make up" for lost time, and guard against a rainy day in the future. This being so, there need be no difficulty about the truth of the stories related below, or about the fact that he is, perhaps, one of the foulest feeders in creation.

We find, that, to use the words of the author of "A Short American Tramp," p. 104, "the fisher Lapps and Esquimaux, who feed on fish, are somewhat fish-like, while the mountain Lapps are tough, wiry, hardy, little mortals," and the effects of an exclusively animal as contrasted with a vegetable diet are, according to the writer of an article headed "The Scientific Aspects of Nutrition," that appeared in *All the Year Round* for February 13, 1875, p. 414, well illustrated by some tribes of North American Indians, many of whom exhibit "a stature superior to the general height of Europeans," while "the stately figures of the flesh-fed Indians of the prairies can be instantly distinguished from the shorter and more ungainly forms of . . . the fish-eating Chinooks. The dwarfish and hideous Root-digger shows in his stunted growth and anxious face how powerfully diet may act on the formation of national character," and "a monotonous diet is invariably" (according to the same writer, pp. 415–16) "the token of a sterile soil or of an indolent people."

It was the barren ground or the backwardness of agriculture that compelled the Norwegian to mingle sawdust with his black rye-bread, and which limited the Scottish peasant to his oatmeal. A rich and enervating climate has taught the Polynesian islander to be satisfied with the spontaneous bounty of Nature, the bread-fruit, the yam, and the fish, whose many-coloured shoals swim in the translucent water between the coral-reef and the yellow sands of the beach. In Jamaica, the easily-contented negro finds that the slightest labour is rewarded with a perennial supply of dainty fruits and vegetables, while on the coasts of Malabar and Ceylon a native family finds it no difficult matter to subsist on the products of the hereditary clump of cocoa-nuts and jacteus, that furnish them with their subsistence during summer;" and so we find again that the food-supplies of whole tribes and peoples are such as their soil throws up, spontaneously or otherwise. We ought not, therefore, to question their taste or censure their cookery. They do the best they can with the materials that Nature has given them, and it were well for us that we were as well contented with our kitchens as they are with theirs.

Alluding to the great appetite or rather aptitude for swallowing immense masses of food that was exhibited by two jesters who were attached to the Court of Leo X., Dr. Doran says, in his History of Court Fools, p. 371, that "they are certainly wonderful buffoons in their way, for one could take a pigeon roasted or stewed, compress it into a species of gigantic bolus, and swallow it whole at one gulp. The other made no difficulty of devouring forty eggs at a meal, and indeed on high festival days, wondering and applauding guests saw him deliberately devour a score of capons." In an article that appeared in the *Dublin University Magazine* for June, 1862, on great scholars and great eaters, the following feats of gastronomic absorption, alias putting away under the belt, are recorded. I have confirmed some of these narratives out of Lemprière, Plutarch, Pliny, and other sources.

Describing Milo, the great athlete of Crotona, who lived 500 years before the Christian era, the former says that he killed with a blow of his fist a young bullock, which he had previously carried for 40 yards on his shoulders, and then set to and ate it all up in one day. "Megacles the Thracian is reported (in an article headed "Physical Education" published in the *Cornhill Magazine* some few years ago) by Athenæus to have eaten a whole ox in two days." As a counterpart to this on the side of the weaker vessels, it may be stated on the same authorities that one "Aglaia, a dancer, and daughter of Megacles, who is said to have been a woman of a gluttonous appetite, used to devour for her supper ten pounds of meat and drink several quarts of wine," and whether she suffered afterwards from the colic or the night-mare deponent saith not.

It is recorded on the authority of Cælius Rhodius, lib. 15, cap. 19, of the Emperor Claudius Albinus, who reigned for a short period, by favour of his army, in this country, in A.D. 198, that he ate for his breakfast one day, five hundred figs, one hundred peaches, ten melons, one hundred fig-peckers (whatever they may be) forty Adriatic oysters—they are nearly a foot each in diameter—and a large supplement of grapes; if I had been a hotel-keeper in his time I'd rather entertained him in the spirit than in the flesh. One Phago, who was a great glutton, devoured, according to Varro, in presence of the Emperor Aurelian, a whole sheep, a wild boar, a young pig, with five hundred loaves and wine in proportion; and Theodoret, a Greek Father of the early part of the fifth century, tells of a certain Syrian woman who consumed daily thirty pullets, and even then she was, like Mr. Toole, "not happy." She was evidently hard to please, but there is, they say, no accounting for taste, in this as in other matters, culinary or otherwise; and to crown this catalogue of great eaters, we may mention on the authority of Herodian, Eusebius, Aurelius Victor and others, that the Roman Emperor, Maximin, who was originally a Thracian shepherd, and eight feet high, it is said, despatched daily at his dinner forty pounds of beef and 19 bottles of wine.

It is related by Suetonius, Tacitus, &c., of Vitellius, another Roman Emperor, that "a single feast at a friend's house to which he often invited himself, swallowed up a year's income," and his brother Lucius once treated him with two thousand fishes, and seven thousand singing birds, all exquisitely delicate and rare. So fastidious and exacting was he, indeed, that "the deserts of Libya, the shores of Spain, and the waters of the Carpathian sea" had to be diligently searched for his use, and such, we are told, was his love of excess, that "he often made himself vomit so that he might renew his repasts afresh" and so gratify his brutal, probably morbid appetite. "The expense of his table amounted, we are assured, to seven millions sterling in the space of four months," and

it is almost a pity that such a monster had not been put, during life, into a sty with a trough of "green vittels" before him, or better, perhaps, turned out to grass, like Nebuchadnezzar, Mary of Egypt, and others of that ilk.

(To be concluded.)

A CHAT ON COOKERY.

By Dr. A. Crespi, of Wimborne.

Late Editor of the "Sanitary Review."

An article on cooking will seem unpardonable impertinence, for what new details can anyone find to discuss? Who can be expected to read a paper dealing with an art that ought to be familiar to every housewife, and on which even what Soyer could suggest ought to be trite? This is so true as to be unanswerable; still, the inefficiency, incompetence, and extravagance of ordinary cooks are proverbial. In spite of all that has been written and said, the art of cooking is—in England—in as rude a state as an ascetic could desire. Ignorance of cooking is not the only evil I have to complain about. What of the unpunctuality, want of care, and negligence of many housekeepers? Everything takes its chance; and there is as much judgment in the management of the house as in the movements of a flock of frightened sheep. The wonder is not that dinner is half an hour late and nothing in the house has a place, but that dinner is ever served at all. Wherever there is gross and shameful untidiness and mismanagement, there, also, are found extravagance, bad cooking, and discomfort.

It is often said, with what truth I do not know, that a French cook can compound a most savoury dish with a few crusts of bread and scraps of meat and a little spice. But of this I am sure, that whether the ingenuity and resources of the average Frenchman are equal to such an emergency, the average Englishwoman is more likely, even now, to spoil the best material than serve up a palatable and nutritious dish. This incompetence is disgraceful and sinful.

The art of cooking is of enormous importance. Indeed, I am not sure that the world would not owe more to good and economical cooks than to skilful doctors. Able and conscientious lawyers, there can be no question, are of less value than competent and economical cooks. I do not wish to exalt cooking at the expense of other arts, but its utility and importance are above question. At the present time, considerably over three hundred millions of pounds sterling are annually expended in supplying the inhabitants of these islands with food. One quarter of the national income is required to purchase bread, meat, and the various articles forming the national dietary. Five shillings in every sovereign go to the butcher, the baker, the grocer, and last—though he ought to be placed first, so large is his share—the publican. Three, sometimes four or five, times a day the Englishman sits down to eat and drink; and how often does his heart sink within him at the nauseous messes before him. Nineteen women in twenty have every day something to do with preparing food for the table. Practice, says the old proverb, makes perfect. Never was anything more true. Long practice and much groping in the dark have taught hundreds of thousands of housewives expeditiously and infallibly to spoil the valuable food entrusted to them.

Cooking, in too many cases, may be defined as the process, sometimes troublesome and roundabout, by which the smallest return is obtained from good, wholesome, and costly food, and by which, indirectly, diseases are caused. Cooking, in the vocabulary of four women out of five, means waste, inefficiency and annoyance. Is this exaggeration? Some readers may think so, but I suspect that stronger language might often with propriety be used. Quite enough, in fact, a great deal too much, is spent on food. A little knowledge of the functions of food and the best methods of cooking would save fifty millions a year, which would provide better houses, more books, higher education, and harmless amusement. Luxury is too common among all classes, and no addition to it is needed. But luxury is not what I am advocating. Indeed, those who keep up an expensive table generally go to the opposite extreme in securing first-rate cooks, and in spending immense sums in purchasing dainties. I do not recommend more costly or abundant food. Nothing of the sort. But is there no mean between the profuse and luxurious display of dainties prepared by skilful men cooks and badly-cooked, unpalatable, and indigestible dishes?

An ordinary housekeeper knows as little of cooking when she has been thirty years in the habit of preparing the family meals, as she did on the day she was just married. Here I shall meet with two rejoinders—first, that good cooking is expensive, and that with plenty of "*nice* things," that stock and curious phrase, at hand, success is not difficult; and, secondly, that no one teaches cooks, and what else can be expected? I do not suppose that a hash could be as palatable as a pheasant; but how many cooks who cannot serve up a hash—and the number is legion—could roast a pheasant or a haunch of venison? As the common dishes of every-day life are in nine cases out of ten failures, would it be reasonable to expect luxuries to fare better? The question answers itself, though a convenient one for a bad cook to put. Nor do I deny that the immense majority of women marry, or take situations, knowing little, and having been taught next to nothing of cooking. Remedies for this state of things I shall not suggest—though the cookery books in circulation, the schools of cooking, and the number of good cooks in the land, should soon remedy this evil were proper care taken. It is the carelessness, incompetence, and want of interest in their work—the characteristics of average cooks—of which complaint may be made. It may be difficult to prepare good pastry or make a rich pudding; but can great skill be necessary to boil vegetables properly, or see that meat is thoroughly done? Should long practice go for nothing in such simple matters? Ought not years of practice to enable women of intelligence to acquire the rudiments of a useful and indispensable art? Were a woman to commence housekeeping, knowing absolutely nothing of cooking, she ought, in five years, to teach herself all that she needed.

Circumstances, or rather my own tastes, have brought me much in the way of people moving in widely different spheres of life. While I cannot sufficiently admire the *cuisine* of men of fortune, I could not, without exaggeration express my disgust at the cooking in the houses of the poor; and of that in the families of tradespeople I have few agreeable recollections. I do not complain of plain food nor of the humbleness of the table, but simply of bad cooking. Exceptions there are, and these exceptions show that the poorest, with care, could have things served up in better style and better cooked. I have seen cooking in the houses of fairly well-to-do people—medical men and dissenting ministers, for instance—a disgrace to the mistress. In two of the worst cases that came in

my way, poverty was not the excuse that could be pleaded.

Sameness is one of the least serious charges to be brought against the cooking of an ordinary middle-class family; though more variety would be agreeable; there are generally worse evils—bad cooking and serving-up nauseous, indigestible, and wasteful dishes.

The greater efficiency of male cooks has been attributed, and with reason, to better method. Much more than women they work by rule. They rely on the clock, the scales, and carefully-tested recipes. It is not always greater knowledge that is necessary; great care, more deliberation, and better method, would, in many households, effect a marvellous transformation.

A good cook does not after all depend on book and rule; a certain natural aptitude is necessary, and knowledge acquired from teachers is useful. It would be useless to try to educate every woman with the expectation of making her a skilful cook; nor is it necessary that all women should be first-rate cooks; but every woman should and could, if disposed, learn to prepare the common articles of food so that they should be digestible and palatable. Whether the trouble to get the knowledge be great or small, it ought to be faced. In the case of the poorer class of mothers, the preparation and arrangement of the dietary are the chief objects of life, and on the food two-thirds of the family income are sometimes spent. In the matter of food lies the greatest opportunity for the display of economy, care, and skill; and nowhere can ingenuity be so often displayed. In some households the food bill swallows two, three, or four hundred a year, while method and wisdom would enable the mistress to save sixty or eighty pounds—a sum that could be spent in many other ways. I wish it understood that I am not condemning the culpable waste in nearly all households; that is a different matter. Waste and extravagance prevail in families in which cooking is exquisite; they are also as common in houses where the preparation of food is grossly neglected. Prevention of waste in a household, especially in a large and expensive one, and the careful cooking and scientific selection of food are, generally speaking, widely different matters.

Attention to one or two things would go far to change one of the worst features in the life of tens of thousands of estimable and tender-hearted women. Before entering on them let me say that the mother of a family ought, little though she may care for reading, to acquire the rudiments of cooking and get a scientific knowledge of the properties of foods. Few things will be of more service through life; but whether this be done or not—and that it will ever be done generally I do not expect—the rudiments of cooking ought to form a part of every woman's self-education, and of the training she gets from her teachers and mother. It will some day be seen that no system of female education is complete which does not include the selection and cooking of food—matters more important to girls of the poorer classes than anything else, and to the rather miscellaneous class, designated young ladies, as necessary as the piano and fancy work, or the conjugation of French irregular verbs.

Method in arranging and selecting recipes is of the first importance. No creditable cooking can be expected of women of average intelligence unless they proceed by rule. Here and there a genius, apparently hap-hazard, throws together a number of ingredients and a palatable dish results. As a rule, not one person in a thousand, after years of practice, can trust to memory or the eye, except in cooking plain dishes. Quantities must be carefully weighed, thoroughly mixed, and systematically cooked. Recipes, proved by experience to be serviceable, must be ready and religiously followed.

Then *time* is most requisite in the operations of cooking. Vegetables, meat, pies, pastry, puddings, take time to get well done. The greatest cause of waste is not commencing early enough to prepare the meal. The loss of a few pounds of badly-cooked potatoes a week in a household amounts to little. Unfortunately the waste from insufficient and slovenly cookery is a matter of every-day occurrence in hundreds of thousands of families, and I believe that the money loss cannot fall short of millions of pounds every year. It is no trifle to serve, day after day, half-boiled potatoes and vegetables, half-cooked fruit and under-done meat. The human stomach not only fails to get the nourishment it should from these viands, but inconvenience—even disease—is often, in the long run, the result. What can be more unpalatable than food served up before it is thoroughly cooked, and what less satisfying to the appetite?

In the last place, not sufficient interest is felt by housewives in cooking. Ignorant that it is a fine art, indifferent to the complaints of husband and children, unaware that waste accompanies bad cookery, the majority of women place the preparation of food lower than other household duties. Complaints from victims are ridiculed as proceeding from daintiness. Any food which the stomach loathes, that, whether from toughness, richness, bad flavour, or nauseousness, is not a pleasure, cannot possibly be wholesome or economical, and must be injurious. A wise mother could check gluttony on the part of her children, were good cookery to encourage over-eating; but I do not think it would. Whether it would or not, matters could hardly be worse than now. If disease and discomfort are to be the penalties of eating, it is better they should be the result of a man's folly in taking too much, than of the negligence of his relatives or servants.

No intelligent and competent housekeeper, whether mistress or servant, should be content with merely mastering the rudiments of cooking. Might we not expect that she would make cheap and palatable dishes, the recipes for which she had herself put together? Then she would deserve to be called a thoroughly good cook in the broadest sense.

Anything it is a person's duty to do, he ought to do well, and in doing it thoroughly he ought to find pleasure and feel pride. Cooking is an important part of the daily work of millions of English mistresses and servants, and it is, therefore, one of the things in which they should excel. They should not begrudge the time and thought which becoming skilful and economical cooks requires. Proficiency in cooking would economise time, food, and money, and be tantamount to a considerable addition to a small income, while it would save much vexation of spirit and make home-life more attractive than is sometimes now the case.

"There is a gentleman in the parlour who wants to see you, dear," said the young wife. "Do you know who it is?" said the husband; to which the young wife replied, "You must forgive me, dear, but that cough has worried me of late, and you take such poor care of your health, and—and, oh, if I were to lose you!"—bursts into tears. "There, there, dear, your fondness for me has inspired unnecessary alarms. I am all right. But I will see the doctor, of course, just to satisfy you. Is it Dr. Pellett?" "N—o," she hesitatingly replied, "it is not a doctor, it's a—a—a life insurance agent."

Personal Health

"Be timely wise;
With health all taste of pleasure flies."—*Gay.*

LENTEN MEDITATIONS.

Now that it is Lent, a certain proportion of our readers are no doubt living in a very frugal way. The great Roman physician, Baglivi, who had a large practice among Roman Catholics, relates that in Italy "an unusually large proportion of the sick recover during Lent, in consequence of the lower diet which is then observed as part of their religious duties."

There is a humorous book, now seldom seen, by Sir Francis Head, entitled "Bubbles from the Brunnens of Nassau, by an Old Man." In this work the "Old Man" is truly astonished at the "enormous quantity of provisions" which the invalid population of the watering places "so placidly consume." After noticing "the heavy masses which constitute the foundation of the dinner, and the successive layers of salmon, fowls, puddings, meat again, stewed fruit, and, lastly, majestic legs of mutton — which form the lighter superstructure," he adds, "Nothing which this world affords could induce me to feed in this gross manner. The pig which lives in his stye would have some excuse, but it is really quite shocking to see any other animal overpowering himself at mid-day with such a mixture and superabundance of food."

Further on he observes, "that almost every malady to which the human frame is subject, is, either by highways or byways, connected with the stomach; and I must own, I never see a fashionable physician mysteriously counting the pulse of a plethoric patient, or, with a silver spoon on his tongue, importantly looking down his red, inflamed gullet (so properly termed by Johnson 'the meat pipe'), but I feel a desire to exclaim, 'Why not tell the poor gentleman at once—Sir, you've eaten too much, you've drunk too much, and you've not taken exercise enough!' That these are the main causes of almost everyone's illness there can be no greater proof than that those savage nations which live actively and temperately have only one great disorder—death. There is no donkey in creation so overladen as our stomachs, and it is because they groan under the weight so cruelly imposed upon them, that we see people driving them in herds to drink at one little brunnen."

We fear that while the foregoing is perhaps too highly coloured, there is altogether too much medication for those who are chronic over-eaters. There are many pale-faced women and hearty dyspeptic men who would be all right if they were to be confined to a restricted diet. Pepsin tabloids, nux vomica, acids, carminatives merely fillip the system in such cases to proceed further on unphysiological lines. On the other hand, there is many a one whose supply of food is all too small, and who cannot eat except in dread of evil consequences. Such people now—whatever may have been the case once—need no Lenten abstinences. We would recommend them to take, generally speaking, in suitable doses and at suitable times, Cod Liver Oil, such as Kepler's Solution, or Malt Extract, and Extract of Nux Vomica, preferably Bishop's Granular Effervescent Extract.

Fortune may render a man unhappy; it is only himself that can make himself despicable.—*Carlyle.*

HOW WE SING.

By Austin Flint, M.D.

THIRD AND LAST PAPER.

The mechanism by which the vocal chords are approximated in portions of their length has not been satisfactorily explained, but there is no doubt with regard to the fact of such action. The extent of such shortening of the chords must vary in different persons, and in the same person, probably, in the production of falsetto notes of different pitch. According to Mrs. Seiler, this shortening is due to the action of a muscular bundle upon little cartilages extending forward from the arytenoid cartilages in the substance of the vocal chords as far as the middle, but dissections by competent anatomists have failed to confirm this view.

Some singers, especially tenors, have been able to pass from the chest to the falsetto so skilfully that the transition is scarcely apparent, but the falsetto never has the vibrant quality of the chest voice.

The chest voice in the female does not differ from the chest voice of the male, either in its general quality or in the mechanism of its production. In the best methods of teaching singing, one important object is to smooth the transition from the chest to the lower medium. The full chest notes, especially in contraltos, closely resemble the corresponding notes of the tenor.

Laryngoscopic observations show that the mechanism of the lower medium and upper medium in females does not radically differ from the mechanism of the chest voice. In these registers the arytenoid cartilages are brought nearer and nearer to each other, as the voice ascends in the scale, until, in the higher notes, they actually touch. It is probable that the vocal chords alone vibrate in the lower and upper medium, while parts of the arytenoid cartilages participate in the vibrations in the female chest voice. Still, in the lower and upper medium the vocal chords are not divided, but vibrate in their entire length.

The vocal chords are actually much shorter in the female than in the male, and the larynx is smaller. In the male, the length of the chords is about seven-eighths of an inch, and in the female, about six-eighths of an inch. If the chords alone vibrate, without any part of the arytenoid cartilages, the difference in length would account for the differences in the pitch of the voice in the sexes. A tenor cannot sing above the chest range of the female voice without passing into the falsetto, to produce which he must actually shorten his vocal chords so that they become as short or shorter than the vocal chords of the female. This is shown by the scale of range of the different voices compared with the length of the vocal chords; and this idea is sustained still further by a comparison of the male larynx, during falsetto production with the female larynx. In the male falsetto, produced by artificial shortening of the vocal chords, the more nearly the resonating cavities are made to resemble, in form and capacity, the corresponding cavities in the female, the more closely will the quality of the female voice be imitated. It is probable that the vocal chords in the female present a thinner and narrower vibrating edge than the chords in the male, although there are no exact anatomical observations on this point. This may account for the peculiarly clear quality of the upper registers of the female voice as compared with the male voice or with the female chest register. Analogous differences exist in reed instruments, such as the clarinet and the bassoon. This comparison of the female upper registers with the male falsetto does not necessarily

imply a similarity in the mechanism of their production, as is assumed by some writers. The vocal chords in the female lower and upper medium vibrate in their entire length; in the male falsetto, the chords are artificially shortened so that they are approximated in length to the length of the chords in the female.

To reduce to brief statements the views just expressed, based partly on laryngoscopic examinations—that are far from complete—by a number of competent observers, the following may be given as the mechanism of the vocal registers in the female, taking no account of the changes in form and capacity of the resonating cavities:

1. The chest voice is produced by "large and loose vibrations" (Garcia) of the entire length of the vocal chords, in which the ends of the arytenoid cartilages, to which the chords are attached posteriorly, participate to a greater or less extent, these cartilages not being in close contact with each other.

2. In passing to the lower medium, the arytenoid cartilages are probably not absolutely in contact with each other, but they do not vibrate, the vocal chords alone acting.

3. In passing to the upper medium, the arytenoid cartilages probably are firmly in contact with each other, and the vocal chords alone vibrate, but they vibrate in their entire length.

4. The head register, which may be called the female falsetto, bears the same relation to the lowest registers in both sexes. The notes are clear, but deficient in vibrant quality. They are higher in the female than in the male, because the vocal chords are shorter. Laryngoscopic observations demonstrating this fact in the female are as accurate and definite as those showing it in the male.

The reasons why the range of the different vocal registers is limited are the following: Within the limits of each register the tension of the vocal chords has an exact relation to the pitch of the sound produced. This tension is, of course, limited by the limits of power of the muscles acting upon the vocal chords for high notes, and by the limit of possible regular vibration of chords of a certain length for low notes. The higher the tension and the greater the rigidity of the chords, the greater is the force of air required to throw them into vibration; and this, of course, also has certain limits. It is never desirable to push any of the lower registers in female voices to their highest limits. All competent teachers of singing recognize this fact. The female chest register may be made to meet the upper medium, particularly in contraltos; but the singer then has practically two voices, a condition which is musically intolerable. In blending the different registers so as to make a perfectly uniform single voice, the vibrations of the arytenoid cartilages should be rendered progressively and evenly less and less prominent, until they imperceptibly cease when the lower medium is fully reached; the arytenoid cartilages should then be progressively and evenly approximated to each other until they are firmly in contact and the upper medium is fully reached. The female vocal apparatus is then a perfect organ. While single notes of the chest, lower medium and upper medium, contrasted with each other, have different qualities, the voice is even throughout its entire range, and the proper shading called for in musical compositions can be made in any part of the scale. The blending of the male chest register into the falsetto, and of the upper medium into the female falsetto, or true head voice, is more difficult, but it is not impossible. Theoretically, this must be done by shortening the vocal chords gradually and progressively and not abruptly, unless an abrupt shortening be required in order to produce a legitimate effect of contrast.

Even in singing identical notes, there are distinctly recognizable differences in quality between the bass, baritone, and tenor, and between the contralto, mezzo, and soprano. As regards female voices, these may be compared to the differences in identical notes played on different strings of the violin. For male voices, they may be compared to the qualities of the different strings of the violoncello. Falsetto notes may be compared to harmonics produced on these instruments.

These ideas with regard to the mechanism of the different vocal registers have resulted, first, from a study of these registers from an æsthetic point of view; then, from an endeavour to find explanations of different qualities of sound, appreciated by the ear, in laryngoscopic and other scientific observations, and not by reasoning from scientific observations as to what effects upon the ear should be produced by certain acts performed by the vocal organs. It is well to remember, in this connection, that the works of John Sebastian Bach, Beethoven, and other old masters, were composed exactly in accordance with purely physical laws, long before these laws were ascertained and defined, as has lately been done, particularly by Helmholtz.—*The Forum.*

Waste.—The complete erasure of the word "waste" from the dictionaries, at all events in so far as it has any relation to industrial products, is, if not quite an accomplished fact, undoubtedly becoming more and more imminent; and we may thank the chemists of this generation for teaching us how to recover and utilize innumerable substances which, in their ignorance, our grandfathers threw away. Thirty years ago the manufacturers of iron, gas, and chemicals everywhere neglected all but the prime objects of their industries, whereas to-day, on the system of taking care of the pennies and allowing the pounds to take care of themselves, competition has induced us to regard our legionary by-products as so many integral parts or branches of each enterprise. If the intelligent men who have "gone before," and who were looked upon by their contemporaries as wise in their generation, could by any chance reappear among us, we might conduct them to our gas works, and with a certain pride explain the origin of our sulphate of ammonia, our aniline dyes, and our hundred other extracts from coal tar. From the contemplation of gas we would turn with them to some of our smelters and furnaces, and point to the mineral wool, the cement, the glassware, the pottery, the fire bricks, and the fertilizer, all derived from our furnace slag; and finally, entering one of our great chemical works, we should show them how the once devastating gases, so fatal to life and vegetation, are no longer sent free into the air, but are condensed and transformed into staple articles of trade, and how by an ingenious and, to them, undreamed of process we extract the precious metals from our exhausted sulphur ores. To their wondering question, "How can these things be?" we might reply that all these marvels result from a modern and enlightened policy, which, in many countries, has fostered every species of research in every branch of science, encouraged great minds to ponder over and gradually unravel the mysteries of nature, and stimulated a general thirsting for that knowledge which, properly applied, must ever ameliorate our condition in this "vale of tears."

Popular Science Papers

"Blessings on Science! When the Earth seemed old,
When Faith grew doting, and our reason cold,
'Twas she discovered that the world was young,
And taught a language to its lisping tongue."
—*Charles Mackay.*

"HARKING BACK" IN HEALTH AND DISEASE.

By T. W. Mills.

FIRST PAPER.

Writers on evolution, and especially Darwin, have endeavoured to explain many curious facts in the forms, colours, and general appearance of animals by reversion to a condition existing in ancestors more or less remote. As this explanation has seemed to be the only one that met the cases, it has been largely accepted. But, so far as I know, physiological and pathological reversion, in the sense in which the term is used in this paper, has not been employed to any appreciable degree by writers of any class to explain phenomena which seem to me to gather fresh interest around them, and appear in a new light when thus viewed.* By *physiological reversion* I mean a return to a condition functionally similar to, if not identical with, that existing in some lower form; and by *pathological reversion*, an analogous result dependent on a disordered condition (disease).

It is now almost superfluous to point out that the embryo of the highest mammals passes through stages of development closely allied to the permanent forms of groups of animals lower in the scale. But that there is also a close functional resemblance in many particulars has not been much insisted upon. The subject is so large that the various adaptations in the embryo (or unborn young) to an environment that is but temporary can be only indicated, and not treated in detail. It is plain that the embryo of the mammal or quadruped, being surrounded by a fluid medium, and drawing the oxygen supplies for its tissues independently of any actual contact with an atmosphere, must resemble functionally aquatic animals proper in many respects. It breathes by the placenta (or after-birth) virtually as the fish and other aquatic animals by gills. The condition of the blood puts it on a par with lower forms; and, even in the highest intra-uterine stage of development, the blood supplied to the tissues is not completely aerated—a condition remaining in all forms lower than the birds. Many functions peculiar to the quadruped, or, if not actually characteristic, but indifferently developed in lower forms, are still less marked in the mammalian embryo. If there be consciousness, it is of that obscure kind existing only in forms of life low in the scale. Reflexes, indeed, there are in abundance, and probably much nervous automatism; but such limited action of the nervous system is precisely what distinguishes lower from higher groups of animals.

Nor is the adaptation of the newly-born quadruped to its surroundings immediate. Throughout the first days of the life of the infant, such adaptation is very imperfect, and in consequence many children perish. Further, the resemblance of the infant to animals of lower groups is shown in many directions, and especially in its nervous and mental acts. The study of infant psychology has of late attracted much attention, and promises most instructive results.

Turning from embryonic and infantile life to the opposite pole of existence, old age, there is much that points in the direction of reversion. It is not a matter of great importance whether we regard this as physiological or pathological. Shakespeare's unrivalled description of the epochs (biological and psychological) of human life will occur to many readers. We must not, however, push the resemblances between the infantile and senile stages too far. There is sometimes a functional likeness which can scarcely be considered genuine physiological reversion, although it is a species of functional reversion, for the consequences are the same. But in general in both conditions there is an imperfect adaptation to the environment. Moreover, in certain respects the old man reverts rather to the functional condition of lower forms of life than directly to a previous stage in his own existence. Thus the imperfect action of the respiration, circulation, skin, and also of the nervous system, by which the functions of the brain and the senses are weakened, are all either physiological or pathological reversions, as we choose to regard the matter. But it is not on such facts, however, that I would rely to establish the principles of this paper.

In the various stages of slow or natural death, we have the clearest evidence of physiological reversion in not one but many different systems of the body.

Normally expiration (or breathing out) is largely passive, though possibly less so than the text-books of physiology have represented; but, as is well known, in the dying man this phase, and, indeed, all phases, of the respiratory act are in turn or contemporaneously modified: there may be a diminution of one phase, and an exaggeration of another, &c. In the frog and turtle both inspiration and expiration are active: in such animals we recognize a function, moreover, of the mouth and throat, in respiration, normally unknown in man. Dr. Garland has, however, pointed out that in the tracheotomized dog, and, as he believes, in man under the same circumstances, and also in the dying man, a form of the throat-respiration supervenes. He has proved this experimentally in the tracheotomized dog. In other words, there is a resemblance to what exists normally in the frog. Garland recognized this, though he has not spoken of it as a physiological reversion. But apart from this minor reversion, it is plain that in general the respiration of the dying bears a resemblance to that of the groups with an active phase in both halves of the act. Further, there is frequently a marked facial and

* It was not till long after this paper had been written, and a considerable time after it had been read before the Medico-Chirurgical Society of Montreal, that I became aware that the principle involved in the discussion had been previously announced by Dr. Milner Fothergill, of London, in a communication printed in the *Medical Press and Circular* for August, 1886. I am glad, however, to be able to make this acknowledgment on behalf of so bold and original a writer as Dr. Fothergill.

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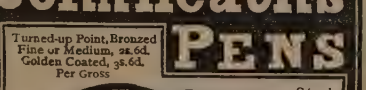

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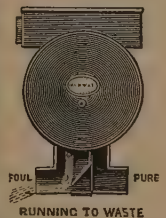

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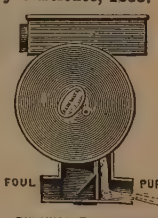

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The price of numbers 1–156 has been increased to 4d. each, as, in consequence of the great demand for them, they are now nearly out of print. Nos. 157 to date may be had, price 2d. each.

LONDON: A. P. WATT 2, PATERNOSTER-SQUARE, E.C.

WHAT IS THIS DISEASE THAT IS COMING UPON US?

LIKE a thief at night, it steals upon us unawares. Many persons have pains about the chest and sides and sometimes in the back. They feel dull and sleepy; the mouth has a bad taste, especially in the morning. A sort of sticky slime collects about the teeth. The appetite is poor. There is a feeling like a heavy load on the stomach; sometimes a faint, all-gone sensation at the pit of the stomach, which food does not satisfy. The eyes are sunken, the hands and feet become cold and feel clammy. After a while a cough sets in, at first dry, but after a few months it is attended with a greenish-coloured expectoration. The afflicted one feels tired all the while, and sleep does not seem to afford any rest. After a time he becomes nervous, irritable, and gloomy, and has evil forebodings. There is a giddiness, a sort of whirling sensation in the head when rising up suddenly. The bowels become costive; the skin is dry and hot at times; the blood becomes thick and stagnant; the whites of the eyes become tinged with yellow; the urine is scanty and high coloured, depositing a sediment after standing. There is frequently a spitting up of the food, sometimes with a sour taste, and sometimes with a sweetish taste; this is frequently attended with palpitation of the heart; the vision becomes impaired, with spots before the eyes; there is a feeling of great prostration and weakness. All of these symptoms are in turn present. It is thought that nearly one-third of our population has this disease in some of its varied forms. It has been found that medical men have mistaken the nature of this disease. Some have treated it for liver complaint, others for kidney disease, &c., &c.; but none of the various kinds of treatment have been attended with success, because the remedy should be such as to act harmoniously upon each one of these organs, and upon the stomach as well; for in Dyspepsia (for this is really what the disease is), all of these organs partake of this disease, and require a remedy that will act upon all at the same time. Mother Seigel's Curative Syrup acts like a charm in this class of complaints, giving immediate relief.

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laryngeal respiration, so well seen in the normal breathing of such lower mammals as the rabbit.

Accompanying this alteration in the breathing, there is a great change in the circulation. As I have shown, as the result of a special study of the subject, functional action ceases in the hearts of the cold-blooded animals invariably in a certain order; that is to say, the ventricles are the first to cease to act. The same applies to the quadruped, and I have elsewhere expressed the conviction that it is fortunate for man that such is the case. It is difficult to see how the ventricles could retain at once that sensitiveness and power to adapt to the ceaseless and innumerable changes in the inner life of a mammal, and also the resistance so marked in the auricles and the great veins at their junction with the right auricle, corresponding to the *sinus venosus* of lower forms. Now, in the dying person there may be only an occasional beat of the ventricles to several of the other parts of the heart; or the ventricles may pulsate so feebly as to expel but little blood: hence the latter becomes gradually more venous, with corresponding effects in the venous channels, which become more prominent; in the nutrition, leading to lowered temperature generally most pronounced in the parts most distant from the heart; in gradual loss of all the functions of the brain; finally, the only muscles that are functionally active are the respiratory, the sphincters, &c. In a word, the dying human subject sinks functionally lower and lower in the scale of animal life. There is physiological reversion of the widest kind. This seems the most instructive aspect of the facts; indeed, I can see no other way in which a really philosophical significance can be read into such phenomena.

It may be readily perceived that in sleep itself there is a daily reversion. Sleep not only reduces all human beings to the one level, but it puts all quadrupeds on the one plane. Now, it will be seen, if we consider the nervous system, that the parts peculiar to man, or most developed in man, are the very ones that for the time being are as good as annihilated in sleep. Why should this be so? Why should this order be followed? To say that the parts of the nervous system remaining functionally active are those necessary to maintain the vital functions, in reality throws no light on the question unless we regard man as derived from lower forms, while the whole becomes clear enough if we admit this. Much the same line of argument applies to the reversions witnessed in mesmerism, sleep-walking, and allied phenomena.

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"Isabella Thwaites."

Public Health

"Health is the first Wealth."—*Emerson.*

RIVAL MEDICAL SYSTEMS.

Nature, in the course of an admirable article on the recent squabble between allopathy and homeopathy, says:—The nucleus of our present medicine may be said to consist of the accumulated experience in the observation and treatment of disease possessed by the priests of Cos, and recorded by Hippocrates, who is justly regarded as the father of medicine. His treatment was based upon empiricism, and was not governed by any absolute rule, for, although he stated that in general diseases are cured by their contraries, he also allowed that disease might sometimes be relieved by medicines which produced similar symptoms, and mentioned that under certain circumstances purgatives will bind the bowels, astringents will loosen them, and substances which cause cough and strangury will also cure them.

The principle that contraries are cured by contraries, *e.g.*, that constipation is cured by purgatives, attained so much importance under Galen and his followers, that the other principle of like being cured by like was nearly lost sight of, and so the antipathic school had for a long time the preponderance. But the use of evacuants, which formed a large portion of the practice of Hippocrates and of medical practice down to the present day, could not always be brought under the head of antipathy, and so it came to be admitted that one abnormal condition in the body might be relieved by inducing another, which was neither of the same kind as itself, nor of an opposite kind, but was simply of a different nature, and this is the allopathic form of treatment. As an example of this we may take the fact that a pain in the head may be cured by a medicine which does not act on the head at all, but upon the bowels.

The antipathic and the allopathic systems of medicine were in vogue in the time of Hahnemann, and their imperfections were very evident to a man of his mental power and acuteness. He saw clearly that the enormous doses which were given in his time were often productive of great harm, and in experimenting with smaller doses he found that his results were better. He also found, what had been noted before by Hippocrates, that he obtained curative effects from small doses of remedies which in large doses produced symptoms similar to those of the disease. In the recognition of this fact Hahnemann agreed with Hippocrates; but, while the father of medicine, testing everything by experiment, and relying simply on the result of experience, regarded the rule "*similia similibus curantur*" as only of partial application, Hahnemann converted it into a universal rule. He began at first by relying on experiment, and spoke of pure experience as the "only infallible oracle of medicine," but he afterwards quitted this sure ground, and committed himself unreservedly to a belief in his theoretical opinions, whether supported by facts or not, and said in regard to his doses that the maxim as to the very smallest being the best is "not to be refuted by any experience in the world." The essence of his system of homœopathy consisted in the universal application of the rule regarding the similar action of the drug to that of the disease, and in the smallness of the dose.

Some modern homœopathists are inclined to regard the minute dose as not essential to homœopathy, but Hahnemann says: "The appropriation of the medicine to any

given case of disease does not depend solely upon the circumstance of its being perfectly homœopathic, but also upon the minute quantity of the dose in which it is administered." The extent to which he carried the dilution of his medicines was extraordinary, and he imagined that the more they were diluted the more potent did they become. Thus he says in his "Materia Medica Pura" (Dr. Dudgeon's translation) that the curative power of aconite is marvellous when it is given "in the dose of a thousandth part of a drop of the decillionth development of power." But even this astoundingly minute dose was unnecessarily strong in some cases, in which he thought "a single momentary olfaction at a phial containing a globule the size of a mustard-seed, moistened with the decillionth potency of aconite, is quite sufficient." But it is difficult for those who have not studied the action of potent drugs like aconite to form any definite judgment regarding their effect in large and small doses; so that it may be worth while to give his views regarding vegetable charcoal, a substance about which everyone can form an opinion.

Most people will be surprised to hear that Hahnemann gives no fewer than 720 symptoms as being caused by a few grains of vegetable charcoal diluted a million-fold with milk-sugar. These symptoms are of the most varying nature, from aching of the corns to headache, palpitation, and rheumatism, with sometimes a peevish temper, and at other times an excessively cheerful one. The variety and severity of these symptoms clearly show that they were not due to the vegetable charcoal at all, but would have occurred whether the charcoal had been taken or not. But the most remarkable instance of a fallacy in Hahnemann's conclusions appears in his famous experiment on the action of cinchona bark in producing ague, which has been regarded by homœopathists as one of the most important proofs of the truth of the system. Hahnemann, at one time of his life, had suffered from ague, as we learn from Ameke's "History of Homœopathy," but he had probably been free from it for some time before he made his experiment with cinchona. It is well known that persons who have once suffered from ague are apt to have it return when their digestion is disturbed, or when they are subject to depressing influences. The dose of powdered cinchona bark which Hahnemann took was very large, and similar doses have produced in other people vomiting and gastro-intestinal irritation. In Hahnemann it produced symptoms of ague, but instead of concluding that the cinchona had simply brought back an attack of his old enemy, by acting as an irritant to his stomach, he concluded that cinchona bark had a specific power to produce ague. Others who have tried the experiment, and who have not had ague before, have naturally failed.

* * * * * *

Although so far behind the other two in some respects, allopathy had this great advantage over them, that it depended simply on the results of experiment; and although it might be influenced, and was influenced at times, by prevailing fashions, its followers were still searching after truth, while the others falsely supposed they had already found it. With the development of pathology and a truer insight into the nature of disease, the term allopathy has fallen to a great extent into disuse, and most of what we might term the orthodox practitioners of the present day object to range themselves under any "pathy" whatever, but aim at a rational practice founded on the one hand upon the knowledge of the nature of disease, and on the other of the action of remedies. Where these are insufficient to guide them, they fall back simply upon empiricism; expecting, however, that before long wider knowledge may increase their power to cure their patients. Their power is no doubt very greatly on the increase; and we have only to look at the fact that within the last few years they have been able by the use of substances belonging to the aromatic series of chemical compounds to regulate the temperature of their patients, so that whereas formerly physicians were obliged to stand by idly while their patients died of high fever, they can now prevent the temperature from rising too high with almost perfect certainty, and thus save their patients' lives. Every day fresh contributions are being made both to the physician's knowledge of the nature of disease and his power to modify it or prevent it.

Cities of Half a Million and Over.—London, England, 3,955,819; Paris, France, 2,269,023; Canton, China, 1,500,000; New York, N.Y., 1,400,000; Aitchi, Japan, 1,332,050; Berlin, Prussia, 1,122,330; Changchoofoo, China, 1,000,000; Sian, China, 1,000,000; Tschautchau-fu, China, 1,000,000; Tokio, Japan, 987,887; Sartama, Japan, 962,717; Tien-tsin, China, 950,000; Philadelphia, Pa., 850,000; Hang-tcheon, China, 800,000; Pekin, China, 800,000; Tschingtu-fu, China, 800,000; Woo-chang, China, 800,000; Brooklyn, N.Y., 771,000; St. Petersburg, Russia, 766,664; Calcutta, India, 766,298; Vienna, Austria, 720,105; Chicago, Ill., 715,000; Constantinople, Turkey, 700,000; Foo-choo, China, 630,000; Moscow, Russia, 611,974; Hang-chow-foo, China, 600,000; Hankow, China, 600,000; Liverpool, England; 573,000; Glasgow, Scotland, 514,043; Pekalonga, Java, 505,204; Madrid, Spain, 500,900; Bangkok, Siam, 500,000; King-te-chiang, China, 500,000; St. Louis, Mo., 500,000; Tat-seen-loy, China, 500,000.

Spectacles for Horses.—A correspondent recently gave some interesting circumstances in connection with a "good grey steed in his own possession." He came to the conclusion that this equine friend of his was short-sighted. He "couldn't see a carrot two yards off," he tells us. So he took the quadruped to an oculist living in the neighbourhood, who made the necessary inspection and certified that the horse had a No. 7 eye, and required concave glasses. The concave glasses thus indicated were obtained and buckled on to the head stall. "The horse seemed a little bit surprised," he says, "when I first put them on him, but his amazement rapidly gave way to demonstrations of the keenest pleasure. He now stands all the morning looking over the half-door of his stable with his spectacles on, gazing around him with an air of sedate enjoyment. . . . When I take him out for a drive," continues the veracious narrator, "he capers about as frisky as a kitten; his manner is altogether changed from his former timidity, and he has got over a bad habit of shying which once troubled him." A week or two ago, however, he turned the animal out to pasture for a few days, of course without his specs, and he at once appeared to be uneasy and uncomfortable. All day he hung about the gate leading into the meadow, whinnying in a plaintive minor key, until his master, seeing what was the trouble, sent up to the stable for the head stall. As soon as the spectacles were placed upon his nose, he was so glad that he rubbed his master's shoulder with his nose, then kicked up his heels and danced down to the pasture in a paroxysm of delight. Staffordshire was the scene of this history. We do not know the locality more definitely.

Jottings from the Journals

"Th' ingredients of health and long life are
Great temperance, open air,
Easy labour, little care."—*Sir Philip Sydney.*

London's Health Wants.—All the contests between Radicals and Tories were of infinitesimally small importance as compared with the question of the preservation of the lives of the people. In considering the city as it ought to be, the first point that required attention was the death-rate. The death-rate of London was remarkably low, but it ought to be lower still. One of our greatest sanitary reformers (Sir Spencer Wells) had declared that the death-rate of our cities ought to be reduced to something like 12 per 1,000, per annum, which would be a reduction of the present rate by about 10 per 1,000. If the death-rate were reduced to 12 per 1,000, it would mean 30,000 lives saved each year in London alone, and this great result might be achieved with the money which was now spent lightly on an African war. Some ten years of engineering labour would be necessary, and then we might have absolutely wholesome water to drink and plenty of it to wash in, a rational and healthy drainage system, pure milk, air without sulphurous fumes in it, cemeteries wholly away from the living, systematic precautions against contagion, hospitals reconstructed on scientific methods, so that they would no longer be nests of pyæmia, no overcrowding, no ill-ventilated factories, less drink, less brutal treatment of women and children, more civilization, more real charity, more true religion. He knew that the death-rate of London was already much lower than that of many large towns, and only half that of some Russian and many Eastern cities, but why should we not go further? Why should we not save annually the 30,000 lives which sanitary reformers told us were still sacrificed to our ignorance, folly, and crime? Before glancing at the steps that ought to be taken to arrive at that result, he might say that there were some things to which he would not consent, even for the sake of the health of the community. He would not, for example, allow policemen to wash people against their will, and he would not let the state take the place of parent. Pure water was our first want. He often thought that but for the conservative powers of *medicatrix natura* we should all be dead men in consequence of the impurity of our water supply. There were two or three ways in which London could be supplied at moderate cost with wholesome water. At first he should prefer to try the plan of drawing it from the chalk in the north and south of London, but he believed that ultimately a vast aqueduct must be built down the centre of England from Bala Lake or Ulleswater.—*Mr. Harrison in "The Architect."*

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A Roman Sanatorium.—An important discovery has just been made at Suzo, about six miles from Castelforte, which points to the conclusion that the Romans were acquainted with the use of mineral springs for medicinal purposes. The erection of new mineral baths is contemplated in that spot, and during the work of excavation the remains of what proved to be old Roman mineral baths have been met with. A road paved with basaltic lava separates the two principal groups of buildings. To the left of this road, and leaning against the mountain side, is the bath for hot mineral springs. The atrium is entered, as in classic dwelling-houses, through a portal adorned with columns, its floor being laid in black and white mosaic, and its roof probably formerly supported by four columns. Between these columns is the impluvium, a square marble basin, round which are seats, which leads to the supposition that it was used for bathing purposes. In the middle of the impluvium a hollow marble column supported a smaller basin of alabaster, into which the water rose through the column, flowing over its edges into the large basin. The further wall of the atrium opens into a large hall; through its side walls corridors lead into chambers to the right and left, the use of which for bathing is indicated by the whole arrangement of water basins and a network of water conduits, some of which are placed in the walls. On the other side of the main road, with a view towards the river, two buildings are located, in front of which a row of columns with walled parapet probably inclosed a garden extending along the river bank. Between, the two buildings, containing rooms of various sizes, all of which give into outer corridors surrounding them, a colonnade provided with seats has been erected. It is concluded that this group of buildings formed a hospitium or inn for the bathing guests—that is to say, a hostelry for those staying for their cure. The purpose of the whole establishment is also shown by the condition of the statuary in the atrium, which has been much injured by the mineral water. The sanatorium must have flourished for a long time, for, together with coins of Augustus and Vespasian's time, Arabian and Norman gold coins have been found.—*Sanitary Record.*

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Skin-Grafting.—Surgeons are familiar with skin-grafting in the human subject, but it is rather a novel procedure to substitute the skin of birds and poultry for snips from the patient's own healthy skin. Wiesmann twice transplanted skin from pigeon to pigeon with success, and three times from fowl to fowl. Under the title of "Dermepenthesis," Mr. G. F. Cadogan-Masterman published some interesting cases a few weeks since in our columns, in which he had succeeded in utilizing the skin of young wild rabbits for the purpose of bringing about the cicatrisation of raw and ulcerating surfaces. Several others have repeated and varied Wiesmann's experiments, but before Mr. Masterman none of them seem to have been enterprising enough to spare their patients the disagreeable snipping incidental to the operation as it is usually practised. At about the same time Dr. Redard communicated to the Paris Academy of Medicine some observations of his own with animal grafts on wounds in human beings. In a case of severe burn of the scalp of eight months' standing, in a child 2 years of age, he obtained a rapid cicatrization by means of grafts from a fowl. He first tried grafts of frog's skin, but as these proved to be repulsive to patients, and did not give very good results, he substituted others from the fowl, and the wound, which measured three inches by two and a half, had completely healed in two months. He had been equally successful in other and subsequent cases. He takes the skin from beneath the wing of a chicken, carefully securing the subjacent cellular tissue, but avoiding adipose tissue. The transplanted pieces varied from a sixth to a third of an inch in size, and they were maintained in position by means of a little cotton-wool and iodoform gauze. The skin of birds and fowls has the advantage of being supple, delicate, and vascular; it adapts itself readily to the surface of the wound, and adheres without undergoing absorption.—*British Medical Journal.*

Our Bookshelf

"Reading maketh a full man."—*Bacon.*

A GUIDE TO CHILDREN'S HEALTH.

The Health of Children. By Angel Money, M.D. (London: H. K. Lewis, 130, Gower-street, W.C. 1888.)

We are tempted to notice this pamphlet prominently, for two reasons—firstly, because of the excellence of the advice it contains; and secondly, because it is sold at the marvellously low price of sixpence, and is thus brought within the reach of all classes. The author, Dr. Money, is well known as an authority on children's ailments, and his remarks are therefore to be relied upon as coming from a skilful physician, and from one thoroughly competent to discuss the chief points which concern the public in the matter of the healthy upbringing of children.

The substance of the pamphlet was delivered as a lecture at the Parkes Museum of Hygiene, London. We are glad to note that Dr. Money has expanded and rendered permanent his lecture-utterances, because, as a text-book for mothers' meetings, Dorcas Societies, and similar agencies of female instruction, this pamphlet will prove highly useful. Its contents read aloud to classes of women, and duly explained and enlarged upon, would, we are certain, prove of immense benefit to all who have the care of children. The contents of the pamphlet are very systematically arranged. From "Growth and Weight" onwards to "Sleep" and "Dwellings," and incidentally to "Hand-Feeding" and "Baths," Dr. Money discourses in a pleasant, practical style.

Take, for instance, his remarks on growth and weight. He tells us that "a vigorous child generally gains four pounds in weight in three months, and an increase of a pound every month causes the child to double its birth-weight in five months, and treble it in twelve. Hand-fed babies often fail to gain weight in a proper manner. At birth under the new conditions of life there is always a loss of weight, amounting on the second day to three or four ounces a day; so that a child three days old may weigh half a pound less than it did at birth. This is called the physiological or natural loss, and is said to average six per cent. of the birth-weight.

"After the fourth day the body grows in weight at the rate of three ounces for the second week, four ounces for the third, five ounces for the fourth; and during the second month an ounce a day is about the right quota of growth in weight. In the third and fourth months about five ounces a week is the amount; this drops in the next three months to an average of three ounces a week; then about the teething period a slight pause in growth and weight may be noted. Growth in length may be accompanied by a slight falling off in weight."

"Growth," Dr. Money continues, "is seemingly very irregular in children and young people, but probably only because we do not yet know the various forces at work in its causation. In spring and early summer the length of the body increases often in a marked manner, recalling something of a similar process in the vegetable world; in northern latitudes growth in children seems only to occur at these periods. When growth is most rapid much care should be exercised to prevent fatigue, so easily produced at such periods, by relaxing work and education. A child in health generally gains twenty pounds in weight and ten inches in height in the first two years of life; the chief increment is thirteen pounds in the first year, and the remaining seven in the second; in the third year four pounds and four inches are about the usual additions to the weight and stature. During the next six years the body increases by annual increments of four pounds in weight, and two or three inches in height. After ten years the body puts on flesh at the rate of eight pounds a year."

The foregoing quotation conveys a fair idea of the author's clearness. His judgment in discussing the vital points of his topic, and in enlarging upon such points is also clearly manifested. For instance, in dealing with the important subject of "feeding," we find him saying that "The difficulty of obtaining healthy and suitable wet nurses, and the expense of asses' milk, have thrown the burden of civilization largely on the cow, from whose milk an artificial compound has to be manufactured to resemble the product of the human breast. Most generally no attempt is made to give the cow's milk the semblance of human milk, simple dilutions with plain water being the practice most in vogue. Cow's milk clots in dense wet cheese-like lumps in the stomach, whilst human milk forms therein fine flakes of loose curd. To make cow's milk imitate this flocculent deposit should be one of our chief objects, and it may be accomplished in many ways, but by none more successfully than the dilution of cow's milk with thin barley water."

Then follows an important piece of information:—"Human milk differs from cow's also in chemical composition, containing one-third less curd and one-third part more sweet-stuff; food for infants should contain as compared with that for adults three times as much albumen and twice as much fat; this knowledge should also be utilized in the making of an artificial human milk. Not only is the human milk badly imitated, but many mothers and nurses substitute for nature's formula either a food of their own or one culled from the newspaper, the side-board of an omnibus, or some too attractive poster. The greatest error committed by mothers and nurses in the feeding of infants is the giving of farinaceous or starchy foods, either too abundantly or prematurely. Let the light of science teach us not to give babies any of the so-called 'food for infants' until some teeth have been cut, that is about the age of seven months."

Added to the above valuable precepts, we find the following important piece of advice:—"Regularity in meal hours is of greater moment to children than adults, on account of the natural feebleness of infantile digestion. To secure regularity but little perseverance is required, for infants are such creatures of habit that a brief education suffices to establish in them expectations of food only at regular times, and when healthy they wake to feed almost with the precision of a clock. As a general rule, babies should be fed every two hours from the end of the first to the end of the sixth week, and then every three hours till twelve months of age. Nevertheless babies have their idiosyncrasies in feeding, and occasionally the intervals between meals may have to be longer or shorter."

The extracts we have just given will show that this excellent pamphlet possesses the high merit of presenting in a plain and unmistakable fashion the chief facts relative to the healthy upbringing of infants. As we have already indicated, the wide distribution of this pamphlet among all classes of society, and the mental digestion of its precepts, would prove an educative boon of the highest order.

"ELECTRICITY IS LIFE."
(TRADE MARK.)

PULVERMACHER'S

WORLD-FAMED

GALVANIC BELTS,

FOR the CURE of NERVOUS DISEASES.

HAVE RECEIVED TESTIMONIALS from

THREE PHYSICIANS to

HER MAJESTY the QUEEN,

THE ACADÉMIE DE MÉDECINE of Paris and

FORTY MEMBERS of the

ROYAL COLLEGE of PHYSICIANS of LONDON.

RECENT TESTIMONIALS.

GALVANISM *v.* NERVOUS EXHAUSTION.

Oxford, March 6, 1888.

Dear Sir,—I am very pleased to tell you that since wearing your Galvanic Belt I am enjoying better health, and am stronger and brighter than I have been for years.

I feel myself now quite restored, and will recommend your treatment to any person who may be suffering in the same manner.

Yours very gratefully, A. BATE.

Mr. J. L. Pulvermacher, 194, Regent-street, W.

GALVANISM *v.* RELAXED THROAT.

Hurst, Ashton-under-Lyne, 5th March, 1888.

Dear Sir,—I wish to inform you that your Galvanic Chain Band has removed the pain from my throat, after being in punishment for one year and nine months, through my throat being relaxed.—Ever yours thankfully, A. KNOTT.

Mr. J. L. Pulvermacher, 194, Regent-street, W.

GALVANISM *v.* PARALYSIS.

King's Road, Honiton, 4th March, 1888.

Sir,—I am glad to inform you that the boy for whose use you supplied your Combined Band has quite regained his walking power, and much more quickly than was to be expected.—Yours obediently, W. COLEMAN.

Mr. J. L. Pulvermacher, 194, Regent-street, W.

GALVANISM *v.* INDIGESTION and SICK HEADACHE.

Chelmsford, Essex, March 3rd, 1888.

Dear Sir,—It gives me great pleasure to state that I have quite regained my health, and am now quite free from those wretched sick headaches which I had continually for the space of three years before I tried your Galvanic Belt.

I am now able to eat anything without suffering with my head, and I am very thankful for the benefit I have derived from your treatment.

Should you refer any one to me, I shall only be too pleased to give them my experience.—Yours truly, G. BEACH.

Mr. J. L. Pulvermacher, 194, Regent-street, W.

GALVANISM *v.* NERVOUS WEAKNESS and DEPRESSION.

Langley, Macclesfield, 2nd March, 1888.

Dear Sir,—The Galvanic Belt which I had from you for a young lady has effected a complete cure; the patient was suffering from nervous depression and weakness.

This is the fourth case I have recommended to try your appliances, and every one has been equally successful.—I am, yours truly, W. WHISTON.

Messrs. J. L. Pulvermacher & Co., 194, Regent-street, W.

GALVANISM *v.* RHEUMATISM.

5, East-crescent, St. Leonards, 14th February, 1888.

Dear Sirs,—It is due to you to say that my shoulder now appears quite well, after having worn your Galvanic Chain Band for rheumatism.

For six years previously I had much pain, and no liniments removed it. Yours faithfully, F. B. ASHLEY.

Messrs. J. L. Pulvermacher & Co., 194, Regent-street, W.

GALVANISM *v.* INDIGESTION and NERVOUS EXHAUSTION.

Oxford, 12th February, 1888.

Dear Sir,—I am writing to tell you of the immense relief your Belts have given me. My indigestion has vanished, and before I wore your Belt I always had to be careful what I ate, but now I do not give it a thought.

By my feelings of lively activity I feel certain that I am entirely cured, as the nervous exhaustion has disappeared, and I feel in my body that I am quite free from that complaint—Yours thankfully, F. HARRISON.

Mr. Pulvermacher, 194, Regent-street, W.

GALVANISM *v.* NERVOUS EXHAUSTION.

The distressing symptoms of Nervous Exhaustion and Debility are speedily removed by means of PULVERMACHER'S world-famed GALVANIC BELTS, which are so arranged as to convey a powerful electric current direct to the affected parts, gradually stimulating and strengthening all the nerves and muscles, and speedily arresting all symptoms of waste and decay.

ADVICE PERSONALLY or by LETTER, free of charge.

FOR FURTHER TESTIMONIALS, both Medical and Private, see new Pamphlet, "GALVANISM: NATURE'S CHIEF RESTORER OF IMPAIRED VITAL ENERGY," post free on application to

J. L. PULVERMACHER AND CO.,
GALVANIC ESTABLISHMENT,
194, REGENT-STREET, LONDON, W. (nearly opposite Conduit-street).

IMPORTANT ANNOUNCEMENT.

COMMENCEMENT OF A NEW VOLUME OF "HEALTH."

HEALTH, as our readers are aware, may be obtained of all Booksellers and Newsagents, and at the Railway Bookstalls, on the day of publication. It may also be ordered from the PUBLISHER, 2, Paternoster-square, London, E.C., who will send the journal, post free, for a year, on receipt of postal orders for 10s. 10d.

As many of our readers who live in remote districts prefer to obtain HEALTH from the Publisher direct, and as we are desirous of increasing the already large number of subscribers who give us a yearly order for the journal, we take the opportunity afforded by the COMMENCEMENT OF A NEW VOLUME to offer the following FREE GIFTS and BONUSES to all who subscribe to HEALTH for one year or longer, on and after FRIDAY, APRIL 6TH, when the first number of Volume XI. will be issued:—

(1.) To each Subscriber who remits 10s. 10d. to the Publisher, entitling him (or her) to receive one copy of HEALTH, post free, for one year, we shall present a copy of Dr. Andrew Wilson's work, entitled "A Manual of Health Science" (Longmans & Co.), value 2s. 6d.

(2.) To each subscriber who remits 21s. 8d., entitling him or her to receive two copies of HEALTH weekly, post free, for one year (or one copy for two years), we will present Dr. Richardson's "Ministry of Health" (Chatto & Windus), value 6s. The copies of HEALTH so ordered may be posted to separate addresses.

(3.) To each person who subscribes 32s. 6d., for three copies of HEALTH, post free, weekly, for one year, we will present the volume by Dr. Richardson mentioned above, and also the handsome, illustrated book entitled, "Studies in Life and Sense," by Dr. Andrew Wilson (Chatto & Windus), value 6s.—being a free gift of the total value of 12s.

The bonus last mentioned will be presented to anyone who succeeds in obtaining three yearly subscribers to HEALTH, and who remits to the Publisher the sum of 32s. 6d., together with the names and addresses of the persons to whom the copies are to be posted each week.

As the literary gifts above-mentioned constitute books containing solid and reliable information regarding health and other matters of popular scientific interest, it will be seen that the above scheme, while intended to increase our already large circulation, also offers distinct advantages to new subscribers who guarantee by their subscriptions a year's support to this journal. All communications regarding subscriptions and other purely business details connected with HEALTH should be addressed directly to the PUBLISHER, 2, Paternoster-square, London, E.C., and *not to the Editor*.

Our Letter-Box

"Conference [maketh] a ready man."—*Bacon.*

NOTICES TO CORRESPONDENTS.

All Communications for the Editorial Department (including Books for Review, Specimens of Sanitary Appliances, &c.), to be addressed to "THE EDITOR OF HEALTH," 2, PATERNOSTER-SQUARE, LONDON, E.C. *Those intended for the Publishing Office to be sent to* MR. A. P. WATT, THE PUBLISHER, *at the same address.*

LETTERS TO THE EDITOR.

ANTI-VACCINATION FOLLIES.

Sir,—Your characteristic spirit of fairness will lead you, I am afraid, towards a goal of useless strife in so far as Mr. Tebb and his friends are concerned. By this time, as you must be well aware, no argument, however excellent and logical, can affect the anti-vaccination party. "They are the men, and wisdom shall die with them," to quote the words of Job, as applied to his over-zealous friends; therefore, you may as well save your space in future, and let Mr. Tebb (who is the most learned and the most gentlemanly opponent of the *clique*) and his friends rejoice in whatever opinions they may have seen reason to formulate about the fearful and wonderful things which they believe issue forth from the use of vaccine lymph. Your rejoinder to Mr. Tebb in last week's Health is a complete answer to his attack on your review of Dr. McVail's book. I, for one, will be curious to note how he may attempt to wriggle out of your facts regarding the puny medical opposition to vaccination he quotes, and regarding your remarks on the fact that many of the so-called evils following vaccination are really simple skin diseases, which may and do follow teething, indigestion, and other infantile troubles, without vaccination being operative at all. My object in writing now, however, is not to slay the slain or to pulverize a butterfly already crushed. I merely wish to put to Mr. Tebb one or two simple questions regarding a single point in his letter to you. I observe he makes *one* of his "medical witnesses" state that *cancer has followed vaccination*. Now, as this is a deliberate and specific statement, I demand that Mr. Tebb should furnish a waiting world with the exact evidence on which this statement regarding cancer is founded. Mr. Tebb and his friends are never weary of asserting the looseness and unsatisfactory nature of medical statements in support of vaccination. Let us turn the tables upon him, and demand that he produce the evidence for the literally monstrous statement that cancer may be a sequence of vaccination, and that at least in the one case he gives cancer appeared as a result of vaccination-procedure. If Mr. Tebb does not respond to this challenge, we shall know what to think of his style of argument. There must be no shuffling. "One swallow does not make a summer," and your opponent may find it a task worthy of his dialectical powers to show how he builds up his theory that vaccination and cancer are directly connected as cause and effect, merely because one medical man has stated his belief in such a relationship. If the argument is of the *post hoc ergo propter hoc* style—that because cancer followed (or is stated to have followed) vaccination in one case, therefore cancer was caused by the vaccination—again I say, we shall know how to designate Mr. Tebb's credulity; for only an ultra-credulous mind could accept such an idea as affording a serious reply to vaccination-arguments. To give Mr. Tebb full opportunity for replying to my query, let me remind him that, to make his answer complete, he will require to furnish us with the family history of the case in which cancer was alleged to occur as one of the "pernicious consequences of vaccination." If he has swallowed the isolated belief of one medical man that cancer may arise from vaccination as a deliberate fact, and without further inquiry, by all means let him avow his error. Mr. Tebb has a clear issue, and, I will add, a grave task before him. He has my best wishes for success in a somewhat hopeless task.—I am, yours, &c.,

Observer.

QUERIES AND ANSWERS.

REPLIES: GENERAL, SANITARY, AND MEDICAL.

W. H. P.—Do you mean the person of that name who distributes quack pamphlets in the London streets? If so, he is a low quack. There is no such name and address in the *Medical Register*; therefore, we conclude the person named must be the quack. We advise you to caution your friend against him.

Yorkshire.—You must trust to diet as well as to drugs. The latter only begin what diet should render permanent. Read advice given to "Alfred Hay" in Health, No. 255, and follow out the hints there given. In addition, try Dahl's Cakes (advertised in our pages) as an admirable aid to your cure.

Alloa.—As the enamel of the teeth is the hardest substance in the body, you can readily see how greatly in error you have been. Children should be taught to brush their teeth morning and night with tepid water, a moderately hard brush, and camphorated chalk. At present, you appear to be ruining the children's teeth through sheer neglect.

Joe.—Antipyrin is driving antifebrin from the field. It is a derivative of chinoline, and when judiciously employed by a physician, is free from any bad effects. Of course, neither drug should, in the first instance, be used save under doctor's orders. The action of antipyrin is to reduce temperature, to relieve pain, and apparently to act as a nerve sedative. The dose varies from five to ten grains. The tabloids (five grains each) of Messrs. Burroughs, Wellcome & Co., Snow Hill-buildings, London, E.C., are the most convenient form for administering antipyrin. Apply to this firm for further information.

Ruddigore.—The following is recommended for favouring the growth of the moustache or hair:—Liquor ammonia (strong); chloroform and oil of jasmine, of each, half an ounce; castor oil, half a drachm; spirits of rosemary to make up four ounces. To be kept in a stoppered bottle, and labelled, "A little to be rubbed into the hair in the morning." Use, also, a little of an ointment composed of Lanolin, two drachms, and oil of jasmine, half a drachm. Rub this into the parts at night, so as to prepare them for the lotion in the morning.

A SEA CAPTAIN'S ESCAPE FROM DEATH.

On those who follow the sea, Nature has generally been kind enough to bestow a rugged constitution, capable of resisting all debilitating effects of the many varieties of climate they meet, the exposure, and the terrific storms and hardships incident to their career. But those "who go down to the sea in ships" are only human, and if the elements are unable to make the hardy mariner wince, Time, that sure harbinger of fate, will eventually find some weak point in his armour through which to thrust a lance. Tales of their life have been woven in song and story, fo'c'sle yarns have fired the heart of many a boy, and even made the pulse of old men beat faster. There is, and always will be, a halo of romance surrounding the lives of those who have kissed the sea-maiden and have been wedded to her bosom; no lover is more true, and no knight ever battled more sturdily and bravely than the sailor in defence of his love. The following true story, vouched for by many prominent people, speaks for itself, and we commend it to our readers as being of great interest, and one which carries its own moral: "Ever since a child I have lived on the water, rising from cabin-boy to captain. I visited nearly every part of the globe, having no ill-health for more than twenty years, but when trouble came upon me it attacked me in the shape of sharp, acute, knife-like pains in the right side, and at times so severe that I would involuntarily fall on the deck, and was obliged to be carried below. This was accompanied with neuralgic pains, and eventually my hands became partially paralysed. At last, in 1873, I was obliged to leave my ship in Oregon, and return home to Nova Scotia. Here I could get only temporary relief, the doctors saying I had muscular rheumatism. I first saw one medical man, and then another, each one giving it a different name. During two years of this I was getting slowly worse, and then came to England. At this time I was suffering intensely with my urinary organs, passing blood, was much irritated and depressed, toes stiff and painful, ankles swollen, and unable to lift my feet more than a few inches from the ground. I had an excessive thirst, and drank large quantities of water. I consulted prominent medical men in Edinburgh and Glasgow, who gave me a little relief, but I soon found myself returning to my old condition, with the addition of intense pain in the back, my legs and feet more swollen than ever, so that I could not make use of them at all. At this time I consulted the physicians at the —— Hospital, who, on making an analysis of my water, said my case was hopeless, and they could do me no good. My life was one great misery, and death would have been a welcome release. My own physician informed my family that I might last a month, but there was no hope of recovery. While in this deplorable condition, my attention was called to a testimonial from a medical man who had been cured of a serious kidney disorder, and whose symptoms were nearly the same as mine, so that I was in hopes that, as this medicine restored him, it would at least ease my misery. I resolved to give it a trial, though I was confined to my bed, helpless, and could not move unaided. My son procured me a bottle of Warner's Safe Cure, and I faithfully followed the directions as to taking it, and at the end of ten days was very much better, and by a month able to walk some distance. After taking it continuously for a few months, my health was completely restored, and to-day I feel better than a person of sixty-five years of age can expect to be. My stomach is restored, have not a pain nor ache; I eat well and sleep well, and I have dumbfounded all my friends by my recovery and cure. You cannot imagine my feelings of thankfulness when I speak of Warner's Safe Cure, and I want the whole world to know of the benefit cases such as mine can derive from the medicine. If I had paid £10 a bottle it would have been cheap, as to it I owe my life. I recommend it far and near, and take pleasure at all times in letting people know its wonderful virtues."

(Signed) Captain J. Paige,
5, Southwell Grove-road, Leytonstone, Essex.

The remedy which cured Captain Paige can be procured of all chemists, or of H. H. Warner & Co., 86, Clerkenwell-road, London, E.C., at 4s. 6d. per bottle.

ROBERT JAMES.—Write to Messrs. Ward & Co., of Eldon-buildings, Bradford, state what is needed for the case named, and get a Hygeia Corset made to measure. You should wear Messrs. Ward's Woollen Combinations all winter.

PETE.—Try the Pyrmont Tablets and Ointment prepared by Bayley, 17, Cockspur-street, Pall-Mall, London, S.W. They have a high reputation for curing the ailments named.

LENZIE.—You have simply been frightened by a low quack, who has preyed upon your ignorance and fears. There is no need for you in the least to be nervous or anxious. Follow the advice given to "P. M." in the present number, and attend carefully to what is said in the pamphlet recommended in the advice mentioned.

A. HAR.—Read the Ambulance Handbook—"Common Accidents, and How to Treat Them"—by Dr. Andrew Wilson, and others, price 1s. 2d., post free, from Chatto & Windus, 214, Piccadilly, London, W., or order of any bookseller.

M. BURTON.—A very convenient way of taking Cascara is in the form of the preparations made by Burroughs, Wellcome & Co., Snow-hill, London, E.C., to be had of any good chemist.

PRINTER'S LAD.—Try a vegetable dietary—stewed fruits, apples, or oranges, &c., and whole-meal bread, with Grant's Oat Flour for supper and breakfast; avoid tea and coffee, and on each alternate morning take twenty drops Cascara Cordial; sponge with cold or tepid water each morning.

HESTER.—Apply to the French Hygienic Society, 56, Conduit-street, London, W., for their advice regarding hair-dyes. For scurf, try the Pomade Trichophile made by the society just named (see advt. in HEALTH).

R. T.—For blackheads in the skin use Bayley's Soap; press out the filled-up glands, and sponge the parts thereafter with Bayley's Eau de Cologne (17, Cockspur-street, Pall-mall, S.W.).

G. W.—As a test for air-purity, a wide-mouthed, stoppered bottle of eight ounces capacity is taken, and a tablespoonful of lime-water placed in it. When agitated with the air of a room, the degree of milkiness of the lime-water (caused by the carbonic acid of the air forming chalk by its union with the lime of the water) will show the impurity of the atmosphere.

MARTHA. — For earache try Pavesi's liniment, which is composed of camphorated chloral, two and a half parts; pure glycerine, sixteen and a half parts; and oil of sweet almonds, ten parts. This is to be well mixed and preserved in a well-stoppered bottle. The method of using it is as follows: A pledget of very soft cotton is soaked in the liniment, and then introduced as far as possible into the affected ear, two applications being made daily. Frictions behind the ear with the same liniment are to be made once a day.

F. N.—See that you are properly fitted with spectacles, as a proper fit serves often to cure such irregularities. Write to, or call upon, Mr. Browning, 63, Strand, London, W.C., and take his advice regarding the glasses adapted for your cure.

EXCELSIS.—Read carefully the pamphlet recommended to "P. M." below, and you will find therein full directions regarding cases such as yours. Follow out the health-rules (and especially those referring to tonics) prescribed in the pamphlet.

THOMAS ROBERTS.—Try Edwards' "Revalenta" Food as an excellent digestive and nutritive diet. There is no sounder preparation.

A SECOND EDITION.

(From the London *Sunday Times*.)

A few weeks ago we published an article giving some wonderful and astonishing experiences of numerous persons. In the article referred to such wonderful cases were mentioned, and verified by a gentleman connected with this paper on his own experience and that of other well-known persons—that it would seem impossible for anything more remarkable to be brought forward; but, as some of the persons are so well known, comment in these cases will be unnecessary. Mr. W. Y. Peel, a nephew of the late Sir Robert Peel, and B.A. of Cambridge University, writes that, his attention having been called to the remedy by the article published by us, he, being a sufferer from neuralgia, used it and was decidedly benefited, and that he is fully satisfied of its efficiency. Another gentleman from the same eminent seat of learning, Mr. R. Butler, M.A., writes: "Having used St. Jacobs Oil for rheumatism, it is with much pleasure that I certify to its marvellous curative powers; it not only cured all pain, but seems to have removed it entirely, as it has never returned. Many prominent persons with whom I am acquainted, and who have been strongly opposed to the use of any remedy recommended outside of the profession, have used it with the best results."

The following is perhaps the most remarkable proof of the wonderful powers of this astonishing remedy:—Henry Coates, of 11, Cheatham-place, Adelaide-street, Hull, railway *employée*, who had been a terrible sufferer for many years from rheumatism in its worst forms, having had the before-mentioned article read to him, determined upon a trial, which has been attended with the most extraordinary results; being anxious that his experience should be known to other sufferers, he decided to bring it forward in such a manner as to leave no possible doubt of its reliability. So on July 17th he appeared before Mr. E. Singleton, a commissioner to administer oaths in the Supreme Court of Judicature in England, and made oath as follows:—He affirmed that he had been totally unable to work for a long time, and had been confined to his bed for a considerable period; that he had tried various doctors and many remedies, but that he grew worse instead of better; that at that time his joints were so swollen that he could not wear boots, and two crutches were hardly sufficient to support him. After having heard of St. Jacobs Oil, in the manner before stated, he purchased a bottle. In twelve hours he found relief, and persevering in its use, he is now cured of his rheumatism, works daily, and can not only walk with ease without a stick, but can run; he enthusiastically recommends this great remedy to those suffering from any form of rheumatism, as it has not only done wonders for him, but many of his friends. One of the oldest chemists of Hull, Mr. T. W. Robinson, in commenting upon this marvellous cure, writes that this is only one of many similar cases that have come to his notice. A. E. Painter, the famous jumper of the London Athletic Club, writes that he strained and bruised his ankle in jumping hurdles, so as to disable himself. At the suggestion of a friend, he used St. Jacobs Oil, with the most marvellous results. E. J. Wade, of the same club and Ranelagh Harriers, sprained his leg and cured it in a similar way. He says that athletes should never be without a bottle. Mr. H. J. Masters, a leading chemist, of 12, Argyle-street, Bath, writes that it is particularly adapted for the cure of muscular rheumatism and sprains of long standing, and that one of the leading physicians of Bath highly recommends it to his patients. We find also that a number of infirmaries, homes, and hospitals are already familiar with its merits, and are using it with great success. Henry and Ann Bright, hon. superintendents of the North London Home for Aged Christian Blind Women, say that it has proved itself unfailing in its results; that attacks of rheumatism, neuralgia, and other pains and aches have in every case been removed; and that many old ladies, some of ninety years of age, instead of tossing about in agony, have been relieved, and had many good nights' rest through its wonderful influence. Mrs. Bright says that she can scarcely say enough in its favour.

We have also the following from Mr. John M. Campbell, proprietor of the Adair Arms Hotel, Ballymena, Ireland, under date July 18, 1885. Mr. Campbell is well known throughout Ireland in connection with the above hotel, and his testimony can be relied upon. He writes that it is with much pleasure that he acquaints us with the great change he has experienced from the application of St. Jacobs Oil, that it would be hard to conceive anything work a cure so rapidly, and that on application his leg seemed to be experiencing an electric shock. After years of severe rheumatic gout or rheumatism, he says he is now without pain, and further, that he has also used the Oil for cramps and croup in his children, and found it most efficacious. We have given the details as above, as we think it well that full publicity should be extended to a matter of such particular interest to all. On calling upon the Great Britain Branch of the proprietors, The Charles A. Vogeler Company, 45, Farringdon-road, London, our representative was shown a mass of testimonials of the same nature as above from all parts of the United Kingdom, and from France, Germany, and other countries.—[2308.]

P. M.—Read the pamphlet advertised in our pages, "A Lecture to Young Men" (free by post for 1s. 1d., from Renshaw, 356, Strand, London, W.C.), and attend to the directions there given regarding your health. In this pamphlet you will find full explanations of the matters to which you allude, and concerning which quacks always frighten the unwary.

O. A. T.—The following pill will suit you: Extract of Barbadoes aloes, two grains; extract of nux vomica, half a grain; extract of gentian, a grain and a half. Make a pill. One such pill to be taken once a day, half an hour before meals. The druggist should make you a dozen such pills at a time.

G. M.—In your case there is want of tone. Go away to your coast for a holiday (by the sea), and take after your meals thrice daily a teaspoonful of Scott's Pure Cod Oil Emulsion. Read the account of Stern's Pumiline (advertised in our pages, and described fully in No. 252 HEALTH), and use this regularly as an inhalation as directed on the bottle. These measures will brace up your system and cure your catarrh, and if you clothe warmly in Ward & Co.'s (Bradford) Woollen Clothing, you will probably be speedily cured of your ailment. For the constipation see advice given to "R." in last week's HEALTH.

H. H. BEALE.—See advice regarding a stimulant hair lotion, &c., given to "L. L." in the last number.

E. J. C. Woodall.—1. There is no possibility of reducing the size of the nose as you suggest. If you begin to tamper with your nose you will probably make it more conspicuous than it now is. 2. Read the article on "Blackheads" in Health No. 199—price 2½d., to be had from the Publisher. 3. Brush well with a soft brush, and use a little brilliantine each morning. 4. Apply a little pure vaseline to the parts. 5. Use the lotion, &c., recommended to "Ruddigore" in the present number. [Not so many questions in one letter in future, please.]

Ignorus atque Ignavus.—1. Send 1s. 1d., in stamps or postal order, to Mr. Renshaw, 356, Strand, London, W.C., and he will send you the pamphlet. If you had read our replies with any degree of care, you would have noted where the pamphlet alone can be had. 2. Use a soft brush only, and rub into the roots each morning a little glycerine of borax. Wash the head once a week with Bayley's Spermaceti Soap and tepid water.

R. A.—Do not waste your money on any such apparatus. Consult a good surgeon, or read the volume on "Deformities of the Face," by J. Foster, M.D., published by Walters, 50, Buckingham Palace-road, London, price 1s.

Lex.—There is no remedy save the cultivation of mental firmness. If your general health is low, try iron and quinine as a tonic.

Blenheim.—Possibly your teetotalism is too severe a strain on your constitution, and your nutrition may be at fault. We advise you to take a little Bokö̈l to dinner daily, as a nutritive malt extract, and thus to brace up your constitution. A glass of Vin Mariani, taken before meals, twice daily, will also do you good as a substitute for Bokö̈l.

W. Brown.—You need not be alarmed in any way. First of all, get your mind cleared of errors by reading the pamphlet recommended to "P. M." in the present number. What you name arises from slight derangement of the digestion. Avoid much butcher meat for a time, and do not take potatoes or any root-vegetables. Drink a little Vichy Water during the day, and at night take a tumbler of hot water on going to bed. Avoid suppers.

M. P.—The tonic you name agrees better with some persons than the other, and *vice versâ*. There is no fixed rule. You must be guided by the results in your own case. Neither tonic should be taken continuously.

Robb.—1. Substitute Hazeline as a lotion for the affected part. Bathe it regularly, night and morning, for a time, with a lotion made by adding one part Hazeline to two parts water, and later on use equal quantities of each. A suspensory bandage should be worn regularly. There is nothing wrong which time and support by bandage will not cure. 2. The family history you name is a somewhat curious one, and complicates the question you ask. Had there been no deaf-mutism, we should have said there were no objections on the score of relationship; but, on the whole, we think with this affection present in the family, and regarding the blood-relationship as well, such an alliance would not be quite safe, physiologically speaking.

Goose.—Note and follow advice given to "J. E. W." in last week's Health; and if not cured by attention to the rules laid down therein, write again.

Patience.—You might try the effect of playing douches of hot and cold water alternately on your knee each morning, for five or six minutes; and get yourself fitted at any good surgical instrument maker's in your city with an electric knee-bandage. Do not exert yourself unnecessarily in running or walking, and report result to us in a week or two.

Dental.—1. Try Bayley's Tooth Powder (17, Cockspur-street, Pall-Mall, London, S.W.) and the mouth wash made by this firm. Both are excellent preparations. 2. The Pommade Divine (Bayley's) applied to the skin will do good.

Perspire.—Wear Ward's (of Bradford) Sanitary Woollen Clothing next your skin as a preventive of chill, and take a tepid sponge bath each morning. Dust a little of Woolley's Sanitary Rose Powder on the affected parts after washing, and after your meals take fifteen drops Fer Bravais in water, thrice daily, for a time as a tonic.

Sanguis.—Read the article on Blackheads in Health, No. 199 (post free, 2½d., from the Publisher of Health), and note what is said therein about a case like yours. For the rest, do not eat much meat, but take plenty of vegetable foods, and avoid chills.

Upholsterer.—The "Remedy Co." you name is a quack affair. We recommend you, for a time at least, simply to persevere with the appliances you have obtained. Cases like yours always improve by perseverance with the remedies you are using. In addition regulate your diet and take as a tonic a wine-glass of Vin Mariani (to be had of Frazer & Green in your city) after your food, thrice daily. This will aid your cure. Above all, keep your mind quite easy: if you worry or brood over your so-called ailment, you will not recover your tone.

Sammy.—Try the effect of following the diet-rules noted in advice to "J. E. W." in last week's number, and use one of the pills daily as recommended to "O. A. T." in the present number. If not bettered, write again.

Francisco.—You have been in the hands of a set of quacks. Read the pamphlet recommended to "P. M." in the present number, and note the advice given therein regarding cases like yours.

Giant Despair.—1. Try taking the Fer Bravais, as ordered to "Perspire" above. 2. Brand's Beef Essence, taken in teaspoonfuls, occasionally, cold, during the day. 3. Not as a rule. 4. Yes; slightly fattening in tendency. 5. No. 6. Obtain from the Publisher of Health the series of articles on "How to become Thin or Fat." The Publisher will inform you of the cost of the numbers. The diet-tables by Dr. Philpott, published by Sampson Low & Co., 188, Fleet-street, London, E.C., also contain useful information.

Edinburgh.—Your sedentary occupation may be against your having a robust tone. Counteract this by taking plenty of outdoor walking exercise, and try a tepid sponge bath each morning. Continue to take the Scott's Pure Cod Oil Emulsion after meals, as a desirable nutrient; while it is probable a little stout or Bokö̈l taken to dinner daily will assist your cure materially. The other symptoms you name are trivial, and the sponge bath will probably cure them. If not, write again.

Veritas.—The probability is you have simply been suffering from a relaxed throat, and from headaches depending on imperfect digestion, while it is clear you have been tampering overmuch with drugs. There is no reason why you should renounce your glass of stout at night if it agreed with you. For the rest, live plainly and lightly (see advice on this head to "J. E. W." in last number); take Dahl's Cakes (advertised in our pages) as a remedy favouring digestion, and try, also, a teaspoonful of Thomson's Cod Oil Cream (Dublin-street, Edinburgh), after food, thrice daily.

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What is Infection? By Dr. Andrew Wilson. See page 360.
How we Sing. By Austin Flint, M.D. p. 364.
Cancer and Smoking. p. 371.

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EDITED BY DR. ANDREW WILSON, F.R.S.E. &C.

Vol. X.—No. 257. FRIDAY, MARCH 9, 1888. [Price Twopence. *Registered at G.P.O. as a Newspaper.*

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[The above letter, dated Sept., 1886, is from a medical gentleman in extensive practice in a large city in the North of Ireland.]

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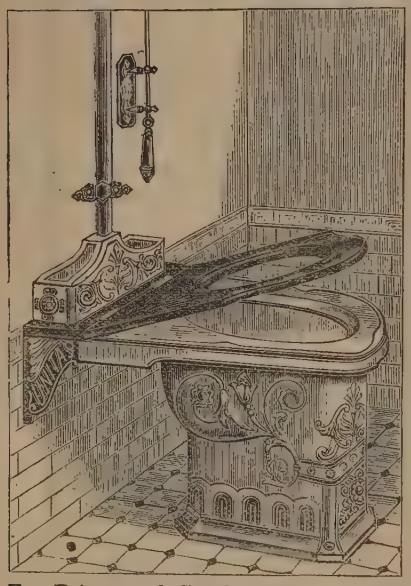

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LUNG LUNG LUNG

HEALTH

EDITED BY

DR. ANDREW WILSON, F.R.S.E., &c.

LONDON: *FRIDAY, MARCH* 9, 1888.

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Notes by the Way

BY THE EDITOR.

"Health is the foundation of all our physical happiness."—*Herder.*

ACCORDING to native journals, Japan is said to boast of a phenomenal giantess. Though only twelve years and five months of age, she is said to stand eight feet high and to weigh over two hundred and seventy pounds; her hands measure over nine inches in length, and her feet fifteen inches.

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THE ablution of the whole body with which English gentlemen begin the day, says the *Lancet*, was some fifty years ago a very occasional, not to say rare, proceeding. The practice, indeed, originated with the wider diffusion of sanitary knowledge among the educated classes. The popular treatises on Physiology and the Laws of Health by the late Dr. Andrew Combe did much to arouse interest in the care of the body, the aim of that enlightened physician and admirable writer being, in the language of one of his school, to make each individual "the intelligent custodian of his own health."

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ELDERLY gentlemen, survivals from the days "when George the Fourth was king," have been heard to declare that it was Combe's vivid exposition of the function of the skin—of its value as a great waste-pipe—that first made them take to the morning tub. Formerly bathing, especially sea-bathing, introduced into general practice about the middle of last century by Dr. Russell, was resorted to for its tonic or bracing effects; but the virtues of the bath for abstersion pure and simple, for relieving the skin of the effete matters thrown out by the pores, were not publicly recognized before Combe's day. Now the practice has come to be so characteristic of Englishmen that on the Continent hotels are known to be frequented by them by the simple test of there being baths in the establishment. It is refreshing to note that testimony is being borne to the value of Dr. Andrew Combe's teachings regarding health and health-laws.

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MR. FREDERIC HARRISON in lecturing on London, thus described the ideal city of—let us hope—the near future:—It must be a city where our noble river will flow so bright and clear that the young people can swim in it with pleasure; where we shall again see the blessed sun and clear blue sky, and the towers and steeples rising aloft in the bright air—a city which at night will be made as light as day with electric lamps, and in whose midst fountains will pour forth water from the hills of Snowdon or Helvellyn; a city where noxious refuse will be unknown, and where no deadly exhalations will be pumped into homes; a city where typhus and typhoid and smallpox and fevers will be as rare as the plague and as much a matter of history as the leprosy; a city where the dead shall no longer be a terror to the living, where preventible disease will be a crime chargeable to some one and an opprobrium to the district in which it breaks out; a city where no child shall go untaught because it has no suitable school at hand; a city where no man shall go without recreation, or society, or religion, because there are no libraries or museums near his abode, no galleries of pictures to visit on Sundays, no parks within easy reach, and no free seats in the church which he cares to enter.

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A RECENT foggy day in Manchester caused a consumption of 19,974,000 cubic feet of gas in that city, against 14,378,000 cubic feet consumed on the same day of the previous year, the latter being about a fair average for the season.

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A DISCUSSION on that curious question, "The Time in which we Think," has recently been raised. In an elaborate article, Dr. J. McK. Cattell gives an account of the time measurements of thought made by means of the line drawn on a rapidly moving surface by a pen attached

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AND OF ALL CHEMISTS. A FULL DESCRIPTIVE PAMPHLET ON APPLICATION.

to the prong of a tuning fork vibrating at a constant rate by means of electricity. By a delicate apparatus constructed on this principle, duration of time may be measured to the one ten-thousandth of a second.

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The writer above named has found that the process of thought varies in its degree of rapidity in different individuals, children and old persons thinking slower than people of middle age, ignorant persons thinking more slowly than educated persons. In this way he also found he could measure the time it takes to perceive, that is, the time which passes from the moment when the impression reaches consciousness, until the moment at which we know what it is. In his own case he found that it took 1-20 second to see white light, 1-10 second to see a picture, 1-8 to see a letter, and 1-7 to see a word.

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It takes longer to see a rare word than a common word, or a word in a foreign language, than in our native tongue. It even takes longer to see some letters than others. "Will time," or time taken up in choosing, can be measured. It takes 1-13 second to judge between blue and red. To recall the name of a printed word takes 1-9 second, to a letter 1-6 second, to a picture 1-4 second. It takes less time to remember the name of a familiar word than of a letter, though it takes less time to see the letter.

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The time of remembering can be measured. It takes 1-4 second to translate a word from one language to another when you are familiar with both. It takes 1-20 second longer to translate a word from a foreign language to your native tongue than it does in the other direction. We can think of the name of the next month in half the time we can think of the last month. It has been demonstrated that sensation (or "nerve force") does not travel through the nerves to the brain so fast as has been supposed. Its speed, in fact, is not much greater than sixty miles an hour.

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At various times people have been warned against swallowing the seeds of grapes, oranges, &c., because of the danger of such substances getting into a small pocket of the intestine, called by anatomists the *appendix vermiformis*. This is a receptacle existing at the junction of the large and small intestines. It has been generally regarded as a rudimentary or incomplete formation—or possibly some meaningless survival of a lost anterior type of digestive apparatus. At any rate, its existence, while presenting no apparent "reason for being," as the French say, is, on the other hand, a positive and constant source of danger, because of the liability of its becoming the receptacle of some undigested seed, fruit-stone, or other indigestible substance.

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In that case it produces a state of inflammation, which, in many cases, proves fatal. Fortunately, but few stones among the great number so heedlessly swallowed seem to get into this little death trap—although anyone seems likely to lodge there. Perhaps more cases of inflammation of the bowels than the doctors suspect may be, in reality, due to this obscure and disregarded cause. In one case which baffled physicians a piece of peanut shell was found after death in the *appendix vermiformis*. Children especially should therefore be cautioned against swallowing plum or cherry-stones.

Original Essays

"Life is not to live, but to be well."—*Martial.*

WHAT IS INFECTION?

By Dr. Andrew Wilson.

The question which forms the subject of this article is an all-important one for the reason that upon the due appreciation of the correct reply thereto, much may be done by the public themselves to limit the spread of those diseases which can be propagated from affected to sound bodies. With respect of the death-rate from infectious diseases nothing need now be said. The mortality to which these diseases give rise amounts to thousands per annum; and that this waste of life—for waste it undoubtedly is—may be traced largely to ignorance and carelessness of health-laws, is an undoubted fact. It becomes clear, therefore, that an immense saving of life could be effected, year by year, if the public were duly instructed in the means which are found to be available for preventing the spread of infectious diseases. One of the first steps in the acquirement of such saving knowledge is undoubtedly found in the shape of instruction regarding infection and its nature. Where do infectious diseases come from? How do they originate? How are they propagated? Such are the queries we may legitimately ask regarding prevalent ailments and modern plagues. Knowing something of the origin and manner of propagation of these ailments, we must be the better prepared to combat their spread, and, in time, to abolish them altogether.

Until the "germ theory" of disease was fully worked out, the nature of infection was regarded simply as a mystery. The old idea of fevers being "dispensations" of Providence or otherwise, arose from sheer ignorance of their nature. The "fever" of old was, in truth, a mystic enough ailment. It appeared without apparent warning; it seized on its victim without betokening its coming; and it spread from him to his neighbours in what seemed to be the most arbitrary of fashions. Little was it to be wondered at, that of old the "judgments" of the skies were regarded as enshrined in the plagues which came apparently out of nothing, and which swept all before them in their course.

When, however, science began to show that the atmosphere around us was, as Tyndall put it, a "stirabout" of solid particles, the clue was afforded for accurate research into fevers and their causation. Long before the scientists of to-day had shown us the nature of the "dust" in the air, speculation had pointed to the atmosphere as the medium which most frequently conveyed fever troubles. It was known that foods and liquids which kept sound and sweet for indefinite periods so long as air was excluded from them, became soured and spoiled when the atmosphere gained access to the vessels in which they were contained. Wine left uncorked, speedily soured; other articles of food went to the bad by fermentation being induced; mildew and moulds attacked eatables exposed to the air, and so the minds of men

Jensen's Cod Liver Oil is acknowledged as the best because it is the only Oil made from absolutely fresh Livers. It prevents all Coughs, Colds, Asthma, Bronchitis; it makes the Digestive Organs act, and is the only remedy of any value in cases of Consumption; it is sweet and pleasant—cannot by any possibility cause any aftertaste, while all its nourishing virtues are retained. Of all Chemists, &c., in bottles, each Wrapper bearing the Registered Trade Mark (an Iceberg) if genuine, at 1s., 2s., 3s. 6d., and 6s. 6d.; or, post free, of Hertz & Collingwood, 101, Leadenhall-street.

awoke to the knowledge that in the air floated myriads of atoms charged with the power of working waste in the common things of life.

Then began microscopic research into this floating dust of the air. Much of it was shown to be inert mineral particles; some of it consisted of shreds of clothing and like relics; while a certain proportion thereof was similarly proved to be of *organic*, that is of *living*, nature. Under this last head, the various living "germs" were included. A great step was taken when it was found that ordinary *yeast*, causing fermentation in sugary fluids, and splitting the sugar into alcohol and carbonic acid gas, really consisted of minute cells or plants. Fermentation, instead of being a purely physical process, was thus proved to depend upon the presence of life. The few yeast plants added to the solution of sugar, multiplied into millions. The fermentation was the result of this indefinite multiplication of plant-life. The little leaven that leavened the whole lump, was shown to be a vital principle, which owed all its powers to the properties wherewith life had invested its kind. In this way, the road was paved for a clearer consideration of the causation of fevers which, it was believed, might owe their powers of propagation to properties similar to those possessed by the familiar yeast.

This latter consideration forms the key-note of modern views about infection. The fever or other infectious disease is regarded to-day as due to the presence of a *living particle* or *germ*, each peculiar to its own disease, and each capable, when placed like seed in an appropriate soil, of propagating, flourishing, and multiplying. A fever, then, is regarded as originating from a living particle—a plant it may be—of low type. Consider how close is the parallel betwixt fermentation and fever. In each case living germs are sown in a suitable soil; in each case there is multiplication of these germs; and in each instance the new germs produced, are endowed with all the powers of their parents. Again, as each plant needs its special soil so does each fever-germ require its own conditions that it may flourish and grow—and reproduce its kind. Yellow fever is only found in the tropics; typhus fever is bred amid the foul air of slums and alleys; typhoid fever finds a home amid sewage and filth; and ague breeds amid swamps and fens. Such are examples of the curious and pregnant analogies between the propagation of fevers and the growth of living things at large.

Again, the microscope, applied to the direct examination of fevers themselves, has actually discovered the germs of which we are speaking. We know to-day by sight the germs of typhoid fever, of consumption, of diphtheria, and presumably of scarlet fever. In many cases we can sow these germs in animals, and produce the fever-symptoms in their bodies; so that the germ-origin of fevers, in a word, may be taken as having been fully proved by modern research.

Following up these thoughts, we note how the problems of infection become simplified exceedingly. Infection, whether direct or indirect, is merely the conveyance of the fever-germ from the sick to the sound. Whether it is conveyed by "contagion," that is, by actual contact with the diseased person, as for instance where a mother contracts diphtheria by kissing her affected child and by inhaling the germ of the disease directly; or whether it is obtained indirectly through the germ having gained access to water (or other fluid) which is drunk by the sound person—as in the case of cholera or typhoid fever—is immaterial to the point at issue. Infection is illustrated in each case, and the employment of such a term as "contagious" in opposition to the word "infectious" is, at the best, a mere multiplication of terms.

Granted that infection has been so far traced to its source, it can readily be conceived that the ways and fashions in which fever germs may be conveyed from the sick to the healthy are very numerous and very subtle in nature. The germs of fevers are very minute bodies, only to be seen under very high powers of the microscope. The air must carry them wherever fever patients are so carelessly treated as to afford opportunity for free escape of germs into the atmosphere. Suppose, for instance, that the bedding of a small pox case, or of scarlet fever patient, were shaken out at his bedroom window—a display of homicidal ignorance by no means unknown—the skin-scales charged with the poison of either disease would be distributed in thousands to the air. Inhaled by persons susceptible to their attack, these floating germs would be the means of spreading the ailments in question broadcast. Where fevers appear in what seems a mysterious manner, we must bear in mind that the atmosphere may carry infection, and that fever-germs are hardy bodies, surviving under conditions of heat and cold which might suffice to kill most higher forms of life. It is more than probable that many of us escape atmospheric infection through our bodies presenting, for the time being, an insusceptibility to the inroads or settlement of the germs we may inhale or swallow. The one great condition which arms us against common infection is a high and sound state of general health. In the strong and healthy body, the germs, other things being equal, cannot find a lodgment; in the weakly and ailing, or in the susceptible subject, they flourish and multiply.

In other ways infection is conveyed to us. For instance, the careless treatment of a single case of cholera or typhoid fever, and the want of disinfection for the discharges of the patient, has flooded a whole town with the disease. These discharges, escaping into water, or into sewage, which in its turn is allowed to pollute water, are capable of affecting large numbers of persons. The argument for the purity of a water-supply becomes, therefore, of high moment in considering how infection is to be averted. Books from the library, read by scarlet-fever patients—a practice too much in vogue—during convalescence especially, are returned to the library charged with fever-matter, capable of infecting readers who peruse these volumes afterwards. Clothes sent to the laundry without first being disinfected—the handkerchief used to wipe the mouth of a diphtheritic patient, for instance—have, over and over again, reproduced infectious diseases.

It is needless to prolong the list of opportunities which fever-material appears to possess of being distributed abroad amongst those who are well. The considerations which ought to dwell with the public continually in this matter of infection may be summed up by saying, firstly, that proper disinfection of fever-cases as to the patient's person constitutes a great ark of safety in checking the spread of germs from the patient directly. In the second place, the perfect disinfection of all articles used in the sick-room will accomplish much that is desirable in limiting the spread of fever; while, thirdly, the rigid supervision of patients who are getting well should be insisted upon as a necessary measure.

If we reflect that each fresh case of fever springs from a preceding case; that each fresh patient has been "infected," in other words, by germs derived from some pre-existing patient—we may appreciate the inestimable value of the great truth that each fever-case, properly

guarded from disseminating its poison abroad, means the prevention of it may be tens, and possibly hundreds, of like cases. The central maxim of religion regarding our duty to our neighbours nowhere finds such apt illustration as in the idea that by due care of one case of infectious disease we may save many other persons from pains and pangs, and probably also from death itself.

AN ANTI-VACCINATOR DISSECTED.

Mr. William Tebb, who is President of the Society for the Abolition of Compulsory Vaccination, has sent us a communication professing to be a criticism of our review of Dr. McVail's book, "Vaccination Vindicated" (Cassell & Co.), a notice of which appeared in Health of date January 27th, 1888. It seems to us desirable, in the interests of vaccination-science, that we should reply to Mr. Tebb's criticisms, because they are mostly of the nature of sophistries, and are readily enough disposed of after even a very slight investigation of his assertions.

In replying to Mr. Tebb's letter, we desire to acknowledge the courtesy of his style and address. It is somewhat of a pity that Mr. Tebb cannot succeed in infusing a little of his own politeness and urbanity into the effusions of the journal which champions the anti-vaccination cause and craze. The abusive tone which writers in that journal, as a rule, think fit to adopt when discussing the views of their opponents, stultifies all honest discussion and relegates those who indulge in such vapouring to the category of the Old Bailey Attorney of note, who, having "no case," ordered the counsel to "abuse the other side."

Mr. Tebb's letter to us runs as follows:—"As this work (Dr. McVail's book) now before me has recently been referred to in your instructive journal, I hope you will allow me a few observations. The title, permit me to say, is a misnomer, for I fail to find either a vindication of vaccination (properly so called) or any statement, of what vaccination is, how and with what material it should be performed, what is the amount of protection it affords, or indeed any scientific explanation of its *modus operandi*. In short, on all elementary and fundamental issues, we are left in the dark. While repeating the most extravagant eulogium of Jenner's discovery, which the author affirms "has been the direct means of saving more lives and preventing more misery than any single discovery that has ever been made in the history of humanity," he ignores as unworthy of consideration the latest medical inquiry on this subject—the vaccination census carried out by a committee of experienced medical practitioners under the presidency of Dr. Charles Drysdale, one of the most enthusiastic of living vaccinators.

"The following are a list of the diseases specified in this work in answer to a question in the official circular issued by the Commitee:

	Medical Witnesses.
Abdominal Phthisis	1
Angoleucitis	2
Blindness	1
Boils	19
Bronchitis	1
Bulla	1
Cancer	1
Cellulitis	5
Convulsions	4
Diarrhœa	4
Dyserasia	1
Eczema	69
Erysipelas	122
Erythema	22
Gangrenosa	4
General Debility	1
Herpes	3
Impetigo	9
Inflammation	10
Lichen	7
Marasmus	1
Meningitis	2
Paralysis	1
Phagadenic Action	1
Pityriasis	1
Pneumonia	1
Prurigo	5
Pyæmia	9
Pyrexia	1
Rickets	1
Scald Head	1
Scarlatina	3
Scrofula	9
Septicæmia	1
Skin Disease	24
Struma Intensified	4
Syphilis	47
Tuberculosis	1
Ulceration	7
Variola	1

"The names and addresses of these medical authorities, about one hundred of whom are public vaccinators, medical officers of health, and vaccine specialists, may be found in Dr. Makuna's 'Transactions of the Vaccination Inquiry,' published in 1883, which was laid before the Right Hon. James Stansfield when President of the Local Government Board. I may also mention that the attention of the Local Government Board, the various medical associations both at home and abroad, as well as ambassadors, consuls, secretaries to legations, and upwards of 4,000 men, and all the medical journals, were specially called to the inquiry, and they were requested to contribute facts and information from all parts of the world. That the bulk of the answers, particularly those testifying to the pernicious consequences of vaccination, should have proved a bitter disappointment to the advocates of compulsory vaccination must be cast to the account of vaccination itself. What, then, becomes of the demand Dr. McVail makes on our credulity as to the 'all but complete harmlessness of the operation as practised in England'? The Doctor's skilful omission of such embarrassing evidence may be good for the establishment of his case; but how does it fare with the defenceless children who are inoculated with these serious, painful, and often incurable maladies? or how is it possible to reconcile his views with those of Dr. Creighton in his 'History of Cow-pox and Syphilis,' impartially reviewed in Health a few weeks ago. I trust to your love of fair play for the insertion of this communication."

Now Mr. Tebb's criticisms are entirely of a negative character, and may be stated thus: (1) Makuna's "Vaccination Inquiry" is not noticed by Dr. McVail; (2) he has avoided all "elementary or fundamental issues," and has not discussed the nature of vaccination, nor its mode of action against small-pox.

The parade of diseases in Mr. Tebb's list is really "skilful," and the formidable Latin names are well calculated to alarm the unwary. The figures, if summed up, amount to about 400; but a moment's analysis shows that nearly *one-half refer to various skin eruptions, mostly trifling and evanescent in character, and apt to be evolved by the cutting of a tooth or the slightest alimentary error*. Besides, we have 122 medical men who have seen erysipelas follow vaccination—a possibility which no vaccinator will deny. As to the forty-seven who bear witness to syphilis, it might be worth knowing how many have actually traced it in their own practice, how many have merely suspected it, and how many are simply expressing their belief in a possibility. But, in fact, the 400 witnesses do not seem to represent 400 persons at all. They are, many of them, like a stage army, getting behind the scenes and reappearing time after time, under various designations, in Mr. Tebb's roll call. A few medical members of the anti-vaccination league, including, say, half-a-dozen vice-presidents, can in this way make quite a brave show. But of all the 400 (?) witnesses, why does not the President tell us exactly how many, exclusive of the members of his own Society, have been led by their experiences of erythema, prurigo, &c., &c., to deny the advisability of vaccination itself, independently of the question of compulsion? That is for us the point of the whole inquiry. There

are about 25,000 doctors in these isles; 4,000 of them were asked to report; 400, or less, complied; and we make no doubt that these included all, or very nearly all, the medical opposition to vaccination *per se*. Does Mr. Tebb's list include twenty such opponents?

But the truth is that Dr. McVail's book in reality discusses very fully erysipelas, syphilis, scrofula, cancer, skin diseases, bronchitis, pneumonia, and, indeed, about the whole of Mr. Tebb's list. He discusses them, too, not on the narrow ground of Makuna's inquiry, but on the broad basis of the Registrar General's statistics. Mr. Tebb talks pathetically of "defenceless children." Has he any conception of the awful responsibility which he and his coadjutors undertake in their opposition, should it prove successful, to vaccination? What if, after all, the medical profession is right, and the anti-vaccinators wrong? What about the tens of thousands of "defenceless children" who, in that case, will be smitten by the disease? How many graves will be filled by the victims of Mr. Tebb's league? And what will be the condition of the survivors? If vaccination had never been heard of, we would certainly not now have had some small fraction of the medical profession recording a list of mostly trifling ailments possibly connected with the practice. But instead, we would have had 25,000 medical men relating their experiences of scrofula, of blindness, of general ill-health, and of terrible disfiguration resulting from small-pox. Only those who know what small-pox is, and what its results are, can measure the utter insignificance of the occasional mishaps that may possibly accompany vaccination.

Mr. Tebb's second criticism has no more point than his first. For years anti-vaccinators have talked of their unanswerable statistics. Mr. Taylor's "Current Fallacies about Vaccination" was "unanswerable," Dr. Wallace's "Registration Statistics" was "unanswerable," and, above all, the question of vaccination was wholly a question of statistics. Dr. McVail has met the anti-vaccinators on their own chosen ground; has analyzed their statistics; has proved them either false or fallacious; and has, instead, set up an array of statistics overwhelmingly in favour of vaccination;—and then, forsooth, the chief of the anti-vaccinators turns round and says that the author should have written another sort of book altogether, and should have gone into a pathological and physiological discussion on the nature of the vaccinal influence, and the theory as to its relation to variola!

It is the sheerest absurdity to say that Dr. McVail's book avoids the strongholds of anti-vaccination. These we apprehend to be as follows:—that vaccination has not diminished small-pox; that it has caused small-pox to spread; that it has not controlled small-pox attacks; that it has caused other diseases; that sanitation, not vaccination, is responsible for the reduction in small-pox; and that there is no benefit in reducing small-pox, as bad small-pox years are otherwise healthy, and mild small-pox years are otherwise unhealthy. These assertions are all capable of proof or disproof by statistics, and the statistics relied on to prove them are those advanced by Wheeler, Taylor, Wallace, Tebb, White, Milnes, Keller, Hopwood, Burt, &c., &c. Now, as a matter of fact, Dr. McVail *has* attacked every one of these strongholds, and *has* discussed the co-related statistics. We can easily understand that a book going into abstruse theories as to vaccinia and variola would have been much more to Mr. Tebb's liking.

As to Dr. Creighton's views, we certainly think they are, in one most important respect, absolutely at variance with Mr. Tebb's own. In the very same sentence in which he mentions them, he speaks of the "inoculation" of the "serious" maladies mentioned in his list. One of the alleged maladies undoubtedly is serious—syphilis, to wit. But Dr. Creighton denies that syphilis has been inoculated. True, he offers an alternative theory, capable of suggesting even greater terrors, and therefore, possibly, more useful as an anti-vaccination weapon. But Mr. Tebb cannot well hold both views, and it will be interesting to watch whether he is now prepared coolly to throw overboard his strongly-stated opinions as to syphilis merely in order to adopt a new cry against vaccination. We have ourselves carefully avoided stating that we agree with Dr. Creighton's views, well expressed though they be.

It is a striking tribute to the work in hand that, as we have already observed, Mr. Tebb does not attempt to reply to any single thing that Dr. McVail has advanced, but contents himself merely with a complaint as to the omissions,—that the doctor has not written some different kind of book—more easily answered, and less damaging to the "cause" of which Mr. Tebb is the acknowledged leader.

Boric Acid.—For styes, apply a solution of fifteen to thirty grains to the ounce. For a deodorizer of the person, effectually preventing perspiration odour, apply in solution or as a toilet powder.

A New Germ-Killer.—This is a new preparation, which the Sanitas Company, Limited, are now bringing under the notice of druggists and medical men as an antiseptic and germ-destroyer. As it is prepared in such a way as to contain 5 per cent. of peroxide of hydrogen and 5 per cent. of bichloride of mercury (corrosive sublimate), together with the usual *soupçon* of terebinthates to which we are accustomed in "Sanitas," its potency is not likely to be called in question. The use of sublimate is, as we all know, now becoming very general in connection with the antiseptic method of treatment; this may be fairly deemed the basis of modern surgical practice, and to the development of the system the success of operations which formerly almost always proved fatal, must certainly be ascribed. For keeping important wounds of the thoracic or peritoneal cavities perfectly aseptic whilst "drainage" is going on, very few substances have been found of sufficient activity to be really effective. The number of these few, also, is (for many purposes) further materially reduced by the caustic or irritating nature of the majority, rendering them unsuitable. Again, however valuable a simple oxidizing agent peroxide of hydrogen may be, it is very prone to decompose, and its action, therefore, is comparatively ephemeral. On the other hand, sublimate, as ordinarily met with, is only sparingly soluble in aqueous fluids. In the preparation we have just examined, however, both these powerful antiseptics are combined in a single solution, and in a somewhat concentrated form, which, therefore, will be found exceedingly convenient for a great variety of purposes in hospitals and elsewhere. Kingzett's Bactericide, diluted with water to the proportion of 1 in 50, contains, of course, the $\frac{1}{100}$th part of sublimate which is so favourite a strength with "Listerian" practitioners, and even at half this strength it is still very effective, and will quickly arrest the generality of septic fermentations. It is easy, too, by its aid, to impregnate a bandage, plug, or surgical dressing with the precise quantity of sublimate per square inch or per ounce which may be desired. Moreover, it keeps well, and may be freely diluted without precipitating.

Personal Health

"Be timely wise;
With health all taste of pleasure flies."—*Gay.*

A NEW AND USEFUL DRUG.

Some of our daily contemporaries have been devoting considerable space to a drug for sea-sickness, and it is a matter of some surprise that they do not exhibit a little more accuracy and caution. Drugs are not playthings, and when it is expedient to place them in the hands of the laity, it should only be with every precaution possible. The drug to which we refer is Antipyrin, upon which a good deal has appeared in the medical journals for some time. It is undoubtedly a most valuable agent, but by no means one to be taken indiscriminately, or customarily in any such doses as the newspapers have been advised to specify.

That antipyrin is of great utility in the prevention of sea-sickness appears to be established from the evidence that has been adduced. It is recommended to take forty-five grains of it within an hour of going on shipboard, but we would warn our readers not to venture taking any such amount, unless under the advice and supervision of a physician, for in those with weak hearts less than half that amount has proved too much. Two or three five-grain tabloids is quite enough to begin with.

But the property mentioned is the least noteworthy of the uses of antipyrin. The drug is a most potent agent, used to—

Lower fever.	Reduce inflammation.
Check bleeding.	Produce sleep.
Relieve pain.	Treat rheumatism.

Antipyrin is not what may be called an hypnotic, but attention has been directed in America to its usefulness in sleeplessness. On this head we are unable to say anything further.

That it is a most potent remedy in fever, has been demonstrated by innumerable trials made with it day after day in various parts of the world. When life is imperilled by the height of the fever, antipyrin can lower the body-heat with absolute certainty. It was supposed until recently that this was the main property of the drug. We now know better.

Of all agents for the relief of neuralgia, whether of the face, side, or hip (sciatica), for renal or hepatic colic, and for the neuralgias to which women are subject, there seems to be no agent like antipyrin. It has been injected subcutaneously in four-grain doses without bad results, though very large, strong injections have caused inflammation. It is well to take by the mouth three three-grain tabloids with water, and repeat in half an hour if not relieved. Ordinarily, the drug causes no disagreeable symptoms like opium.

Hæmorrhage from nearly any part of the body may be controlled by antipyrin. We could fill many a page with the reports of its action in arresting bleeding. In bleeding from any internal organ this drug appears quite invaluable. Comparative physiological trials demonstrate its superior hæmostatic properties as compared with iron and ergotin.

It has cut short erysipelas, and in subacute rheumatism has cured the patients when everything else proved vain. Rheumatism is such an intractable disease that any remedy which will relieve a certain percentage of cases, however small, is most welcome. It may be further mentioned that antipyrin has been given with perfectly satisfactory results in cases of epilepsy. As we have already indicated, the Tabloids are the safest, best, and most convenient form of the drug.

HOW WE SING.

By Austin Flint, M.D.

SECOND PAPER.

In studying the action of the larynx in the different vocal movements, one difficulty at the very beginning is in fixing upon clear definitions of what are recognized as vocal registers. In the first place, it must be recognized that the singing voice is different from the speaking voice. Without appearing to be actually discordant so as to offend a musical ear, the ordinary voice in speaking never has what is strictly called a musical quality, while the perfect singing voice produces true musical notes. This is probably due to the fact that the inflections of the voice in speaking are not in the form of distinct musical intervals, that the vibrations follow each other and are superimposed in an irregular manner, and that no special effort is made to put the vocal chords upon any definite tension, unless to meet an effort when the voice is increased in force. A true musical note or tone is composed of mathematically regular vibrations in definite numbers for each note. A noise is composed of irregular vibrations. Two or more musical notes are in harmony when the vibrations blend and do not interfere with each other. They are discordant when they oppose each other; at certain times producing, by this opposition, short intervals of silence, technically known as "beats." A shout or a scream is quite different from a powerful singing note. No good singer shouts or screams, although such noises are sometimes heard in what is called singing. The difference between the speaking and singing voice is at once apparent in contrasting recitative with ordinary dialogue in operatic performances.

The divisions of the voice into registers, made by physiologists, are sometimes based upon theories with regard to the manner of their production, and if these theories be not correct, the division into registers must be equally faulty. Again, there are such marked differences between male and female voices, that it does not seem possible to apply the same divisions to both sexes. There is no difficulty, however, in recognizing the qualities of voice called bass, baritone, and tenor in the male, or contralto, mezzo, and soprano in the female. A natural and proper division of the voice into registers should be one easily recognizable by singers and teachers of singing, and this must be different for male and female voices. If a division were made such as would be universally recognized by the ear, irrespective of theories, it would remain only to ascertain as nearly as possible the exact vocal mechanism of each register. It must be remembered that the voice of a perfect singer shows no recognizable break or line of division between the vocal registers, except when a difference is made in order to produce certain legitimate musical effects. One great end sought to be attained by vocal training in singing is to make the voice as nearly as possible uniform throughout the extent of its range; and this has been measurably accomplished in certain singers, although the number of such artists is not great.

Judging of different registers entirely by the effect produced upon the ear, both by cultivated and uncultivated singers, the following seem to be the natural divisions in the male voice:—

1. The chest register. This is the register commonly

used in speaking. Though usually called the chest voice, it has, of course, no connection with any special action of the chest, except, perhaps, with reverberation of air in the windpipe and the larger bronchial tubes. This register is sensibly the same in the male and in the female.

2. The head register. In cultivated male voices a quality is often produced—probably by diminished power of the voice, with some modification in the form and capacity of the resonating cavities—which is recognized as a "head voice" by those who do not regard the head voice as equivalent to the falsetto.

3. The falsetto register. By the use of this register the male may imitate the voice of the female. Its quality is quite different from that of the chest voice, and usually the transition from the chest to falsetto is abrupt and quite marked. It may be called an unnatural voice in the male; still, by very careful cultivation, the transition may be so skilfully made as to be almost imperceptible. The falsetto never has the power and vibrant quality of the full chest voice. It resembles the head voice, but every good singer can recognize the fact that he employs a different mechanism in its production.

Applying an analogous method to the female voice, the natural registers seem to be the following:

1. The chest register. This register is the same in the female as in the male.

2. The lower medium register, generally called the medium. This is the register commonly used by the female in speaking.

3. The upper medium register. This is sometimes called the head register, and is thought by some to be produced by precisely the same mechanism as the falsetto register in the male. It has, however, a vibrant quality, is full and powerful, and is not an unnatural voice like the male falsetto.

4. The true head register. This is the pure tone, without vibrant quality, which seems analogous to the male falsetto.

According to the division and definitions of the vocal registers just given, in the male voice there is but one register, extending from the lowest note of the bass to the falsetto, and this is the chest register. In the low notes the vocal cords vibrate, and the arytenoid cartilages, to which the vocal cords are attached posteriorly, participate in this vibration to a greater or less degree. In the low notes, also, the larynx is open; that is, the arytenoid cartilages do not touch each other. As the notes are raised in pitch, the arytenoid cartilages are approximated more and more closely, and they touch each other in the highest notes, the vocal cords vibrating alone. It is probable that the degree of approximation of the arytenoid cartilages is different in different singers, and that the part of the scale at which they actually touch is not invariable. This appears to be the case in laryngoscopic observations.

What has been called, in this classification, the head register of the male is not a full, round voice, but its notes are more or less *sotto voce*. This peculiar quality of voice does not seem to have been made the subject of laryngoscopic investigation. It has a vibrant character, which is undoubtedly modified by some peculiar action of the resonating cavities. It is not probable that its mechanism differs essentially, as regards the action of the vocal chords, from that of the full chest register.

The falsetto register in the male undoubtedly involves such a division of the length of the vocal chords that only a portion is thrown into vibration. Concerning this there is no dispute. In the chest register either the vocal chords, with parts of the arytenoid cartilages, vibrate, as in the lower notes, or the vocal chords, without the cartilages, vibrate in their entire length, as in the higher notes. In the falsetto voice, however, it can be demonstrated, by means of the laryngoscope, that the vocal chords are shortened, sometimes by one-third or even more of their length. When the chords are observed with the laryngoscope during the production of a falsetto note, the edges of their posterior portion are seen closely applied to each other, and there is an elliptical opening in front bounded by the vibrating edges. Sometimes, in the production of high falsetto notes, a short portion of the edges in front is closed, and there is an elliptical space—the vibrating portion—occupying the central part of the chords. This is the difference between the falsetto register and all other vocal registers. It is probably because a very powerful blast of air from the lungs would separate the closed edges of the vocal chords, that falsetto notes are not so strong as chest notes and have no vibrant quality.

Use of Liquorice in America.—It is stated that an American tobacco manufacturer purchased 6,000,000 pounds of liquorice from a Brooklyn house last year for use in his manufactures.

House Poison.—If the condensed breath collected on the cool window panes of a room where a number of persons have been assembled be burned, a smell as of singed hair will show the presence of organic matter; and if the condensed breath be allowed to remain on the windows for a few days, it will be found, on examination by a microscope, that it is alive with animalcules. The inhalation of air containing such putrescent matter causes untold complaints which might be avoided by a circulation of fresh air.

Magazines for March.—In the *Gentleman's Magazine* Mr. Justin Fashe concludes his story, "The Secret Union," while interesting papers on "Marriage by Capture," "A Century of Scene-Painting," and "The Admirable Crichton" are also contained in this number. *Belgravia*, as usual, is rich in fiction. "Zara Vallis" is a prettily-written idyll, while "A Spoilt Negative" is a sprightly story. Messrs. Cassell's serial publications, *Countries of the World* and the *Illustrated History of England*, reach respectively their 46th and 17th parts. Both are well illustrated. *The Housewife* is a useful domestic magazine, but it might well spare from its pages the character-reading from photographs. *The Season* for March, as usual, presents ladies with the latest information in the way of fashionable dress. Its illustrations are of high quality and its letterpress of excellent and clear character.

Fourth Edition.—Now Ready.

"*A Book every Young Man should read.*"

A Lecture to Young Men on Purity of Life and the Preservation of Health, by A Graduate. Price One Shilling, or post-free, 1s. 1d., from Henry Renshaw, Medical Publisher, 356, Strand, London, W.C.

A complete refutation of quackery of all kinds, and a safe and reliable guide, from the medical standpoint, to all young men. Every youth should read this pamphlet as a guide to the safe conduct of life in a moral and physical sense.

In this pamphlet not only are the doings of quacks fully exposed, but the now notorious bogus "electric belt" swindle is explained. Full directions for the treatment of Nervous Debility so-called, and allied ailments, are also given. Thousands of sufferers have welcomed this pamphlet as a veritable beacon-light to health and purity of life

The Family Circle

"The child is father of the man."—*Wordsworth.*
"In bringing up a child, think of its old age."—*Joubert.*

NURSING AS A PROFESSION.

In connection with the recent articles published in Health on "Nursing," the following remarks culled from the *St. James's Gazette* will be perused with interest:—The nursing profession has obtained an important position, from the gradual acceptance of the fact that in sickness the value of the nurse's services is scarcely inferior to those of the medical man. In some cases, thorough capability in the nurse is of first-rate importance. The attention a medical man can give to each case must be limited, however complete and accurate may be his diagnosis and treatment; and much of the real responsibility falls on the nurse. She must be readily obedient to orders, quick to perceive, prompt to act, watchful and observant of every variation in the patient's condition. "Better a bad doctor than a bad nurse" is beginning to be accepted as a truism; and none are more ready to acknowledge than medical men that in cases of grave sickness the patient often owes his recovery to the devotion and unremitting attention of the nurse.

Many women are born with a love of nursing; but however strong may be the desire to alleviate suffering, no woman can become a good nurse without long and careful training. The knowledge that a first-rate trained nurse must possess can only be acquired by years of probation. In particular branches, such as midwifery, where the knowledge required is special and limited, a much shorter period of training will suffice; but for a woman to become a good "all-round" nurse, three years' training at least is necessary. Imperfect or partial knowledge will not do; it must be thorough and complete. The life is one of hardship and self-denial, and a woman entering the nursing profession has to give up some of the best and pleasantest years of her life; therefore the test as to the sincerity of her love for her profession is sufficiently severe. Nursing as a profession for women is more than maintaining its ground, and the standard is rising yearly, while its ranks are being largely joined by women of education and means. But nurses are still recruited mainly from the lower middle class, and are women who have to work to live.

The great disadvantage that the nursing profession labours under is that there is no cohesion, no co-operation among its members. When we reflect that the number of women employed as nurses is over 15,000, it seems a pity that they should remain without any sort of organization. The Bar and the medical profession have a duly qualified council, from which each member receives a diploma as a guarantee of capability. The need of a similar association for nurses seems now to have become evident, and the meeting held at St. George's Hall last week was the first endeavour to carry out such a project. The advantage it promises is two-fold: to the nurses it would secure an organization by which they would be at once placed in a legal and definite position, while it would also be the means of providing them with assistance in sickness and so forth. To the public it would secure a systematic registration of nurses; and registration implies the admission only of those who have passed a satisfactory examination. At present there are two ways of qualifying as a trained nurse—by payment of a sum of money, which enables a woman at the end of a year to get her certificate and practice; or by the ordinary course of training for three years at any of the large London hospitals. All doctors and all the heads of nursing institutions agree that length of training is the important point: no woman can hope to be thoroughly efficient without three years of constant work. The Council of British Nurses will at once place all nurses associated with it in a very different position to that which they now occupy, and the diploma granted to them will be valuable to themselves as well as a guarantee to the public. As it is, many of them fail for want of proper training. To many a woman the years best fitted to train as a nurse, from twenty-three to twenty-six, are those she can ill afford to spare. Many of them have families and relations dependent on their earnings, and the money paid for a year's training represents all their small capital, which must secure as speedy a return of interest as possible. In future, however, we shall have the satisfaction of knowing that in the nurses of the British Nurses' Association we shall obtain the services of women as nearly perfect professionally as they can be. It may be added that to the women of the nursing profession some recognition by the public of the debt they owe them is due, and we hope that if an appeal should be necessary it will be responded to handsomely. We should think of the hours of suffering, soothed and mitigated by the care of the nurse, of her patience, forbearance and watchfulness, and then remember that when broken down and weary from overwork and illness she has often no home to go to, and that there is no organization to assist her. If the British Nurses' Association succeeds in carrying out its programme there will no longer be such people as friendless nurses, while in securing them a recognized legal position they will place the nursing profession on a stable and permanent basis.

A German trade journal recently contained the following advertisement: "Wanted, for the sale of oils and varnishes, several travellers on commission. The latter, when in a dry state, are bright and hard; they do not crack or peel off, and are sold in bottles and jars bearing the brand of our firm on the outside."

The Influence of Sensations on One Another.—Under this head Dr. Urbanschitsch, of Vienna, reports some curious experiments, the value of which must be left to future research to decide. His general conclusion is, that the excitation of one sense-organ increases the acuteness of the others. If a disk be regarded at such a distance that its colour is indistinct, the hearing of a sound will bring out the colour. The beating of a watch is heard more clearly with the eyes open than with the eyes closed. Red and green increase auditory perceptions; blue and yellow weaken them. The fact that we listen to music with our eyes closed is due to other reasons, and also to the fact that the *ensemble* appears best when the tones are not at their clearest. Smell, taste, and touch are open to the same influence. Red and green increase the sensitiveness of each of these senses; yellow and blue weaken their sensitiveness. Touch and temperature have a reciprocal influence. If one tickles the skin and plunges it into warm water, the tickling ceases; if into cold water, the tickling brings out the feeling of cold. These observations are regarded as showing the same re-enforcing action between sensations as has been shown to exist between motions, and as offering a mode of explanation of those curious associations between colours and sounds so insistent in some minds.

HEALTH RESTORED by means of **MILD CONTINUOUS CURRENTS OF ELECTRICITY** generated (without shock) by wearing

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WILL LAST FOR YEARS.

PAMPHLET FREE.

PUBLIC CAUTION. Although all rights are secured by Royal Patents, our great success has led to unscrupulous copying, in some cases not only of the Advertisements, but the outward appearance of the Electropathic Belts also, and these counterfeit Belts being dangerous and disappointing imitations, we wish the public to note the **ONLY ADDRESS** of our Company, as even the name of the Company has been grossly pirated.

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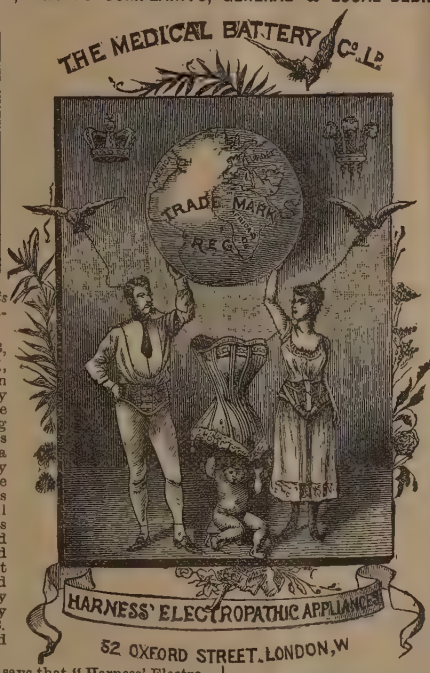
ADVICE FREE.

THOUSANDS have been successfully treated for RHEUMATISM, LUMBAGO, SCIATICA, GOUT, KIDNEY COMPLAINTS, EPILEPSY, PARALYSIS, SLEEPLESSNESS, INDIGESTION, CONSTIPATION, FEMALE COMPLAINTS, GENERAL & LOCAL DEBILITY, HYSTERIA, FUNCTIONAL DISORDERS, &c.

GUARANTEED TO RESTORE Impaired **Vital Energy,** Invigorate the Debilitated Constitution, Stimulate the Organic Action, Promote the Circulation, **Assist Digestion,** and Promptly Renew that Vital Energy, the loss of which is the first system of decay. **Its healing properties** are multifarious; it stimulates the functions of various organs, increases their secretions, gives tone to muscles and nerves, relaxes morbid contractions, improves nutrition, and **Renews Exhausted Nerve Force.** Acting directly on the system, it sustains and assists its various functions, and thus **promotes** the **health** and **vigour** of the entire frame.



MR. C. B. HARNESS, the Company's Consulting Medical Electrician, is always in attendance, and may be consulted daily (**WITHOUT CHARGE**), on all matters relating to **HEALTH** and the application of **CURATIVE ELECTRICITY.** Residents at a distance, and those unable to avail themselves of a personal consultation, are invited to write for a **PRIVATE ADVICE FORM,** which will be forwarded **POST FREE** on application.

The following are selected from Thousands of Reports received. The Originals may be seen at the Company's Rooms.

NERVOUS DEPRESSION.—*Mrs. Crawshaw, 3, Princes' Mansions, Victoria Street, London, S.W.,* writes as follows:—"Aft r a fortnight's application of Harness's Electropathic Appliances, I can testify that the effect has been truly marvellous. For more than eight months I had not left the house, suffering all the while from the most acute form of nervous prostration. My life during those months was a terrible burden. I could not occupy myself in any way, or see any one. I should be wanting in gratitude were I to lose a moment in letting you know of this extraordinary change for the better. I am now well again, and I can truthfully say my health and spirits are better than they have ever been. I am pleased to speak in the highest terms of your appliances and treatment, and shall advise all my friends to consult you." Book containing copies of testimonials and particulars of diseases that have been cured by Harness's Electropathic Belt may be obtained by personal application, or post free.—Address Mr. C. B. Harness, Consulting Medical Electrician, 52, Oxford Street, London, W. (corner of Rathbone Place).

SLEEPLESSNESS.—The Rt. Hon. LORD BYRON says that "Harness' Electropathic Belt i invaluable for sleeplessness."

RHEUMATIC GOUT.—*Major Pakenham, Longstone House, Armagh,* writes:—"Your Electropathic Belt has completely cured me of Rheumatic Gout."

HYSTERIA.—*Mrs. M. Oriel, 8, Berry Square, Dowlais,* writes:—"The Belt has done wonders."

LUMBAGO.—*J. B. Carne, Station Master, L. B. & S. C. Ry., Clapham Junction Station, S.W.,* writes:—"I have derived great benefit from wearing your Electropathic Belt. The lumbago and pains in my back have both ceased."

RHEUMATIC FEVER.—*Dr. C. Lempriere, D.C.L., Senior Fellow, St. John's College, Oxford,* writes:—"I can speak positively of its advantages."

SCIATICA.—*Mr. R. J. Watson, Proprietor "Harwich Free Press," 13, Market Street, Harwich,* writes:—"Harness' Electropathic Belt has completely cured me of Sciatica."

LADIES' AILMENTS.—*Mrs. Hawkey, 43, Naylour Street, Caledonian Road, London, N.,* writes:—"Harness' Electropathic Belt has completely cured me of the extreme debility and exhaustion from which I suffered, accompanied at times by painful hysteria, consequent upon defective circulation and periodic irregularity. Mine is a remarkable recovery."

The following are selected from Thousands of Reports received. The Originals may be seen at the Company's Rooms.

MEDICAL TESTIMONY.—An eminent M.D. of Bath, writes: "*August 22nd,* 1887.—My patient has derived considerable benefit from your Electropathic treatment, and as regard your Xylonite Truss, it far surpasses all others." *The Original may be seen at the Company's Establishment.*

LADIES' AILMENTS.—*4, Dulwich Road, Nov.* 12.—It is with great pleasure I write to say that I feel considerably better than I have done for a long time. All my ailments are gradually yielding to your invaluable appliances; my hearing is also better, and I have every confidence that that will also be restored. I intend calling again to see you on Wednesday next, about 11 a.m., and if you think necessary, have the MASSAGE TREATMENT repeated.—Yours truly, (Signed) MINNIE POWELL.

CONSTIPATION.—*Rev. D. Sutcliffe, Vicar of Holme, Burnley, Lancashire,* writes:—"My health has improved very satisfactorily, and I am now entirely free from the constipation I used to suffer from so severely."

NERVOUS DEBILITY.—*A. A. James, Esq., F.R.H.S., Chapel Road, Lower Norwood, London, S.E.,* writes:—"I have obtained great benefit from wearing your Electropathic Appliances. The pains in my head have left me, and I feel stronger both generally and locally."

LIVER COMPLAINT.—*Barry Close, Esq., 72, Cambridge Street, Pimlico, London, S.W.,* writes:—"It has effected such a positive cure that I should be glad to answer any inquiries."

DYSPEPSIA.—*Miss Wells, Scarboro',* writes:—"I feel altogether stronger and better."

SCIATICA CURED.—*Mrs. Conway, 29, Archway Street, Barnes, Surrey,* writes:—"I have been a constant sufferer from sciatica for the past ten years, and my cure seems a marvel."

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Full particulars of Browning's Method of Suiting the Sight, by correspondence, and Testimonials, post-free.

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That great success of Messrs. Southall's invention of their Sanitary Towels for Ladies—backed up by the powerful recommendation of the whole Medical Press and the important testimony in their favour of professional nurses and obstetric specialists as the greatest boon to womankind produced this century—has caused the Towels to come into almost general use.

Although all rights are secured by Royal Patents, this great success has led to unscrupulous copying, in some cases not only of the advertisements and labels, but the style of the packets, these counterfeit packets covering dangerous and disappointing imitations of the genuine Towels.

The importance of getting the real Patented article cannot be too strongly impressed upon ladies; and as a protection against these useless and fraudulent imitations, every genuine packet of Southall's Towels now bears the signature of the Patentees and Sole Manufacturers, Southall Brothers & Barclay, to copy which is forgery.

Ladies are earnestly requested, in ordering, to specify "Southall's Sanitary Towels."

Supplied at 1s. and 2s. per packet of 1 Dozen, being the actual Cost of Washing; by Ladies' Outfitters, Chemists, and Drapers, Everywhere.

Tin Stock Boxes for ladies, 9d., 10d., and 1s. each, to hold Southall's Sanitary Towels, obtainable from Ladies' Underclothing Houses. Post Free from the Manufacturers, at 1s., 1s. 2d., and 1s. 5d.; or with a dozen Towels in each, 2s., 3s. 2d., and 4s. 3d.

Sample Packet of One Dozen Towels, with Descriptive Circular, containing testimonials from Medical Men, Professional Nurses, &c., by Parcels Post, for *1s. 3d.* or *2s. 3d.*: Six Packets, *6s. 6d.* and *12s. 6d.*; from the Patentees and Sole Manufacturers, SOUTHALL BROTHERS & BARCLAY, BIRMINGHAM. Wholesale Agents: SHARP, PERRIN & Co., 31, Old Change; and STAPLEY & SMITH, London Wall, London.

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CLARKE'S WORLD FAMED BLOOD MIXTURE.

Is warranted to cleanse the blood from all impurities, from whatever cause arising. For Scrofula, Scurvy, Sores of all kinds, Eczema, Skin and Blood Diseases, its effects are marvellous. Thousands of Testimonials from all parts. In bottles, 2s. 9d. each, and in cases of six times the quantity, 11s. each, of all Chemists. Sent to any address, for 33 or 132 stamps by the Proprietor,

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TRADE MARK, "BLOOD MIXTURE."

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GRATEFUL—COMFORTING.

COCOA

MADE WITH BOILING MILK.

WANTED INDEXES to VOLS. 3 and 5 of "HEALTH." Address—A. P. WATT, Publisher, 2, Paternoster-square, London, E.C.

PRUDENTIAL ASSURANCE COMPANY Limited.

HOLBORN BARS, LONDON.

Extracts from the THIRTY-NINTH ANNUAL REPORT,

FOR THE YEAR ENDING 31st DECEMBER, 1887.

THE DIRECTORS have much pleasure in presenting their Report and Accounts for the year 1887.

The total assets of the Company have been raised from **£6,811,954** to **£7,867,103**, being an increase of **£1,055,149** during the year.

Ordinary Branch.

The number of policies issued during the year was **37,450**, assuring the sum of **£3,903,635**, and producing a New Annual Premium Income of **£192,109**.

The Premiums received during the year were **£535,131**, being an increase of **£138,191** over the year 1886.

The claims of the year amounted to **£158,257**. The number of deaths was **1,071**, and **39** Endowment Assurances matured.

The number of Policies in force was **115,451**.

Industrial Branch.

The Premiums received during the year were **£3,058,501**, being an increase of **£147,206**.

The Claims of the year amounted to **£1,204,823**. The number of Deaths was **142,665**.

The revision of the Tables of the Industrial Branch (in all cases in favour of the Assured), which was alluded to last year, has been much appreciated by the Policy-holders. The effect has been to add more than **£30,000** to the amount paid in the year for Claims, owing to the increased benefits thus afforded.

The number of Policies in force was **7,599,554**, including **89,232** Free Policies.

THOS. C. DEWEY, WILLIAM HUGHES, } *Managers.*
W. J. LANCASTER, *Secretary.*

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Established 1862. Solely under Medical Direction.

HOSPITAL TRAINED NURSES for every description of disease—MEDICAL, SURGICAL, MENTAL, and MIDWIFERY—can be obtained at this Institute on application to the Secretary or Lady Superintendent at a moment's notice, being resident in the Home.

MALE ATTENDANTS and NURSES specially for FEVER cases.

Telegraphic Address, "Nursing Institute, London."

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COD LIVER OIL CREAM
DELICIOUS,
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Public Health

"Health is the first Wealth."—*Emerson.*

BURIAL REFORM.

As our readers are aware, the policy of Health, as regards disposal of the dead, has from the first been one of strenuous advocacy of cremation, as in our opinion the only safe and certain means of preserving the health of the living in relation to the dead. We are glad, however, to afford space for an account of another movement in Burial Reform, inaugurated by the Church of England Burial, Funeral, and Mourning Reform Association. While, in our opinion, vastly inferior to cremation, it is pleasing to observe that an attempt is being made to inaugurate another system of reform, and to abolish the costly, useless, and absurd fashions which mark the methods of ordinary burial.

The memorandum from which we quote details that the Burial Reform Association has for its standard the Burial Service, which crystallizes and emphasizes the teaching of Holy Scripture respecting Life and Death, and which is intended for the burial of the body of a Christian by Christians. The Association contends that the Burial Service suggests remedies for the evils which have changed the simpler mode of burial of earlier times to one of costly ostentation.

1. The Burial Service shows forth the Christian principles of Faith, Hope, and Love, leaves no room for the despair which has often been the chief characteristic of a modern funeral, and, when carefully considered, cannot fail to suggest to the Christian artist emblems and memorials symbolizing the highest thoughts and aspirations of the Christian Faith, to the exclusion of the inverted torch, the cinerary urn, and the dismal pageantry of the conventional funeral procession, which are of heathen origin. 2. The Burial Service seems to set forth the principle of moderation. There is to be moderation in the sorrow of the bereaved, who are "not to be sorry, as men without hope." Thence it may be inferred that moderation is to be observed in other respects. The outward marks of mourning are to be simple and unobstrusive. Flowers will be used because they tell of the Resurrection, but there should be no extravagance of expenditure in this, in dress, or in any other detail.

3. The Burial Service invites solemn meditation and concentration of the mind upon things unseen. Everything which may distract the attention, such as unnecessary expense, or show, or entertainment, is to be avoided, and encouragement given to the exercise of simplicity, with temporary withdrawal from the pleasures of the world for quiet contemplation; lest the solemn warning be forgotten, "It is appointed unto men once to die, but after this the Judgment." 4. The Burial Service seems to encourage practical, brotherly love. Over the bodies of the richest and of the poorest are to be said the words Our Brother (or Sister), indicating that Christian love is to be shown at the burial of all alike. The last rubric, "While the earth is being cast upon the body by some standing by," may imply that while the Priest recites the Service, others, by this distinctive act, are to take their share in the last act of love.

5. The Burial Service seems to point to timely interment, which not only prevents possible danger to the health of the living, but also tends to preserve in the minds of the relatives a happy recollection of the peace and beauty which mark the features of the recently dead. The burial should hardly be deferred beyond the third day, and in cases of infection should take place earlier. "We sow not that body that shall be . . . There is a natural body and there is a spiritual body." 6. The Burial Service prescribes the laying of the body into the earth. The fifth rubric, "While the body is made ready to be laid into the earth," enjoins an interment of the body as close to mother earth as reverence and decency permit. If the coffin be chosen for its perishable nature rather than for its durability, and if the burial be in sufficient and suitable soil, the air descending unimpeded through the earth above, will exercise upon the body its oxidizing and purifying action, and freely effect that dissolution which is indicated in the words, "Dust thou art, and unto dust shalt thou return."

7. The Burial Service makes provision for the preservation of the public health. The second rubric, "The Priest and Clerks meeting the corpse and going before it either into the Church or towards the grave," permits the body, in case of danger of infection or other sufficient reason, to be carried direct to the grave. Moreover the Service orders "earth to earth" burial, "which method," writes Sir Lyon Playfair, M.P., an Ex-President of the British Association for the Advancement of Science, "is as harmless a mode of disposing of the dead as burning; and if the coffin be of a perishable nature, if the soil be dry and porous, if the graves be not too crowded, the dead are resolved into air, and into ashes, as certainly in three years as they are in a furnace in the course of an hour, and in both cases without injury to the living;" whilst burial in a durable coffin in a vault, or when bodies are overcrowded in the same grave, generates noxious gases and liquids dangerous to the living.

The Burial Reform Association aims at the encouragement of (1) deeper faith in the life to come, (2) stricter moderation in every detail, (3) more serious meditation and retirement, (4) larger exercise of practical brotherly love, (5) more timely interment, (6) greater respect for the human body after burial, and (7) more anxious concern for the health of the living.

The Rev. F. Lawrence, Weston Vicarage, York, is the Honorary Secretary of the Association.

WATER-TESTS BY MEANS OF GERMS.

We have from time to time informed our readers of the progress made in testing drinking-water supplies as to the number and character of micro-organisms present in a given sample, and have pointed out that while this mode of testing water may be in some cases a useful addition to chemical analysis, it is as yet very far from being a substitute for it. The difficulties in the way of drawing definite conclusions from the results obtained by mixing a drop of the water to be tested with some nutritive material, such as gelatine, and then counting the number and noting the character of the separate and distinct colonies of bacteria which are produced, are due to the fact that in ordinary waters, not specially contaminated, a dozen or more forms of bacteria are likely to occur; that these have different periods and modes of development; that the growth of one may interfere with that of another, and that all of these tend to increase the difficulty of determining whether the bacteria of a particular disease, such as typhoid fever, are present in the sample. One of the first difficulties met with in such investigations is the fact that some of the colonies produced in gelatine cultures have the property of liquefying the gelatine, and some of them do this very rapidly.

This tends to prevent the development of other colonies, or at least makes it difficult or impossible to observe and register such development, and this is the main reason why water cultures have been usually limited to three days' time. Prof. Bischof has recently made public the results of a series of experiments made by him upon means of checking the growth of the liquefying and rapidly spreading colonies, so as to permit of longer periods of culture, and thus to give to those bacteria which require more than three days to develop a chance to show themselves.

He found the most convenient means of destroying the vitality of a colony were crystallized potassic permanganate and spongy iron, either of which will, when applied in very small quantity, check the growth of a colony, while it will not poison the adjacent gelatine, and, therefore, will not interfere with the development of another bacterium of slower growth which may happen to lie in the immediate vicinity. In the experiments made by this method, culture of water samples for nine days usually showed a marked increase in the number of colonies, sometimes giving thirty times as many as were obtained by three days' culture. Even after nine days new colonies may continue to appear. This fact is interesting when taken in connection with the effects of previous storage on the number of colonies and as to the differences observed according to whether the water was stored before or after filtration. Changes of development in the micro-organisms can certainly be produced by storing the water for a longer or shorter time before testing it by the gelatine culture.

With regard to the objection that the culture tests do not distinguish between the harmless and the dangerous bacteria, it may be said that the same objection holds good with regard to the results of chemical analysis.

As a matter of fact, however, culture tests do, even with our present very imperfect knowledge, enable us to distinguish some of the dangerous bacteria if they are present. But the actual finding of the bacillus of typhoid or the coccus of erysipelas is not at all necessary to enable us to declare a given source of water-supply to be dangerous. A dangerous water-supply is not merely one which actually contains specific, pathogenic bacteria. It is one which is specially liable at times—not always—to contain such bacteria. This liability exists whenever a water-supply is contaminated with human excreta, and biological analysis, in the great majority of cases, is simply one means of determining whether such contamination exists. In some half a dozen cases it has been found possible to demonstrate the existence of the typhoid fever bacillus in a water-supply by culture methods, but in every one of these cases the presence of this bacillus had been practically demonstrated by the production of disease in man before the biological analysis was made. This does not prove that the method is valueless. Far from it; it rather proves that the method is one which may be relied on to furnish some good evidence that a water is contaminated with sewage, though no specifically dangerous bacteria are present in the particular sample examined; and, in the great majority of cases, this is all the evidence that is needed to indicate that special precautions should be taken in the use of such water.—*Sanitary Engineer.*

Sulphur in Whooping-Cough.—A Norwegian physician claims that whooping-cough may be readily cured, even in one night, by causing the patient to sleep in a room in which sulphur has been burned.

Popular Science Papers

"Blessings on Science! When the Earth seemed old,
When Faith grew doting, and our reason cold,
'Twas she discovered that the world was young,
And taught a language to its lisping tongue."
—*Charles Mackay.*

THE PHYSIOLOGY OF GOOD AND EVIL.

Taking into thoughtful consideration and patient study all the facts before him, the man of science finds two natural causes of evil. He finds first the most wonderful of wonderful phenomena, at this moment inscrutable, that the physical and mental qualities, good and bad, pass down from one person to another, in parental or ancestral line, and this so truly that one generation implants into another, and another, and another, and yet another, its own virtues and vices. He discovers that when all the great descending characteristics have softened away, some peculiar characteristic which may not have appeared for many generations may reappear in its primitive intensity. This is descent of evil or of good, and with evil predominant, evil as the prominent descent. He too calls the phenomena phenomena of conception—heredity.

He finds, again, that there are other physical and mental qualities which are acquired by imitation from those who surround the person who is in that period of life when imitation is easiest; and the qualities, good or evil, which are thus acquired, are due, he says, to the shapening of the life, to the environment.

Thus the man of science discovers, observes, classifies the fruits of good and evil, reduces the phenomena to law, and deals with them as fixed and certain qualities, that must be, when the conditions which lead to them are permitted to exist.

I can imagine that these statements may seem too novel to admit of proof. Let me, in a brief abstract, prove them from a record of scientific research which is as strange as it is valuable. Mr. Dugdale, of New York, an enquirer deputed by the "Prisons Association," has, within the last few years, investigated the life history, extending over a century, of one great criminal family. Visiting a county prison, Dugdale found six persons who turned out to be blood relations in some degree. One, the oldest, was a man of fifty-five, waiting trial for receiving stolen goods; two, was his daughter, aged eighteen, held as a witness against him; three, was the uncle of this girl, in charge for burglary in the first degree; four, was an illegitimate girl, aged twelve, of the same branch of the family, committed for vagrancy; and five and six were two brothers of another branch of the family, aged respectively nineteen and fourteen, accused of an assault with intent to kill.

These six persons belonged to a lineage reaching back to the early colonists. They had lived in the same locality for many generations, and were so despised by the respectable community that their family name had come to be used, generally, as a term of reproach. Of the immediate blood relations of these six persons, twenty-nine males were still living, at ages varying from fifteen to seventy-five years, seventeen of whom were criminals for crimes and misdemeanours, including assaults, intent to kill, larceny, burglary, murder, forgery, cruelty to animals, and crimes of lust.

These facts relating to the living members of the family led Mr. Dugdale to trace out the history of their dead. He was able to go back to the time when the first members of this family settled in America. One of them

was even then called "*Margaret, the mother of criminals.*" He found that from this parent stock 1,200 had directly and indirectly descended, out of which he distinctly followed the life record of 709 of all ages, alive or dead, not one of whom escaped the contamination of evil or its consequences; the grand result yielding an estimate that the members of this family had cost the State, in seventy-five years, over one million and a quarter of dollars for the treatment of their crimes, and their diseases and poverty incident to crime.

The facts in themselves are to the last degree important; but the analysis of them surpasses in interest. The learned author was able to trace out how one primary evil produced another, with a precision which is all but mathematical. He reduced, in this research, the origins of evil to such measurable nicety that the saying which Paul applied, "Be not deceived, God is not mocked; whatsoever a man soweth, that shall he also reap," is brought down to an elementary scientific demonstration.

Let us here compare our parallels. The statement that men are born in sin science confirms; it says that sin or evil is incident to heredity. The saying that sin or evil may be acquired under temptation, that "evil communication corrupts good manners," and may pass on, science confirms; it says that the cause and contraction of evil may be dependent on *environment*. The saying, "Suffer little children to come unto Me, for of such is the kingdom of heaven," conveys, by a gentle emotional impulse, the natural discovery that children as yet untouched by imitation of evil temptation are amenable to goodness. And science, led by reason and strict analysis of fact, repeats the same truth. The heredity may be bad, but if we save even the *born* bad from the environment of evil, we can make the bad the good in a generation of goodness. We could turn, she says, the very inborn qualities of some evils to useful goodness.

In a letter on the employment of criminal children, which I published a few years ago, from the pen of Mr. Isaac Ashe, President of the Central Criminal Asylum of Dundrum, Dublin, he expresses that if the child of the clever forger be taught draughtsmanship, the heredity proclivity to a criminal use of an instinctive faculty, so-called, is directed into an analogous yet healthy channel, with the hopeful results of curing tendency to crime, and of making a skilful artizan. If the children of generations of pickpockets be taught to use their criminally deft fingers and delicate touch in some handicraft requiring a special capacity of finger, such as watch-making, the healthy function is found for a nervous proclivity and a muscular aptitude which would otherwise fairly work itself out in the criminal acts to which its very existence forms an almost irresistible temptation. But to attempt to abrogate utterly or eradicate a criminal tendency without such utilization of it in a healthy direction, is futile.

"Natura expellas furcâ tamen usque recurret," which means in free translation—

> "Though man may check nature by matter of force,
> She will take her own way as a matter of course."

In observations such as these science indicates how true, if not gentle, she is even to the outcast. Admitting, forced to admit, the birth of sin, for that is nature, foreseeing the perils of temptation, or, as she would call it, the environments, science too detects the period of rescue, and gives in her way also the bidding, "Suffer little children to come unto Me."

I will be content with one more very short exposition of this parallel.

Touching what religion calls the temptation to, and science calls the environment of evil, science detects that some influences, of pure physical character in their origin, are sufficient to generate the most distinctive evils, and that these evils, once generated, pass on by birth or heredity. One illustration of this fact will answer most aptly, because it is most commonly open to observation and confirmation. There shall be a person born of the most correct parentage in respect to the virtue of truthfulness. That person shall grow up in the perfected practice of the virtue of truth, so that his or her word shall be a password of integrity, and honour, and right. But by environment that person shall come under the fatal influence of one common everyday agent, alcoholic drink, and as the agent changes its victim and masters its victim, the first symptoms of the victory of evil, in what is called dipsomania, shall of a certainty be the loss of the once pre-eminent virtue. Of the many victims of intemperance whom it has been my misfortune to meet, not one has escaped this moral abasement, departure from truth—the vice of falsehood. It is a part of the moral disease, as distinct and as clear as any part of the physical disease—unsteady gait, restless impatience, or palsied speech—which springs from alcohol.

It is as if the spirit of untruth had entered the body like a physical poison, had corrupted the mind, and made it a veritable centre of sin.

I am led from these reflections to one more parallel, bearing on the wages or results of good and evil.

The religious view on this question is so familiar to every one, I have but to name it to bring it to the recollection. It is told in the language of the two Testaments, in the plainest terms, that while length of days is the reward of goodness, "the wicked shall not live out half their days," and "the wages of sin is death." These and many other sayings are pregnant with the idea that to carry on evil, to *be* evil, is to suffer disease and prematurely to die.

This is the voice of religion. It is quite equalled in plainness of lesson by the voice of science; for science not only states, but proves—not only declares, but calculates, and delivers the calculation.

Science detects, and in the most solemn teaching relates, the benefits of goodness of life, the miseries which spring from evil. She traces diseases which descend from generation to generation from evil; she reads the story of inborn evil in the face, the build, the character of even the innocent victims of the original offence. She grasps in her impartial survey the national evidences of evil. The death-rates of nations and communities are to her calm reason the lessons of the virtues, the vices, the wealth, the poverty of those who produce them. Her ministers know individually how stern is the truth that "the wicked do not live out half their days," and can each and all most truly declare that in the great living book of disease there is not a single instance of a wicked man who is free from disease of body or mind, or who approaches to the attainment of a healthy life.

Emphatically, science re-echoes the saying in all its solemn import, "The wages of sin is death."—*Dr. B. W. Richardson in the "Asclepiad."*

A Georgia farmer made a hundred dollars off an acre planted in watermeloms, and a neighbouring doctor made two hundred dollars off the same acre.

Healthy Houses

"A happy home must be a healthy home."—*Anon.*

WASHABLE WALLS IN COTTAGES.

E. CHADWICK, in the *Architect*, says: As a principle, all interior cottage walls should be made washable. Besides the evil arising from absorbency of the animalized gases of walls of the common construction, there is another great source of evil attaching to walls of the common soft stone construction—the absorbency and retentiveness of water or damp. In England the common bricks absorb as much as a pint or a pound of water. Supposing the external walls of an ordinary cottage to be one brick thick, and to consist of 12,000 bricks, they will be capable of holding 1,500 gallons, or 6½ tons of water. To evaporate this amount of water would require nearly a ton of coal, well applied. The softer and more workable stones are of various degrees of absorbency, and appear to be more retentive of moisture than common brick.

Professor Ansted states that the facility with which sandstone absorbs water is illustrated by the quantity it contains both in its ordinary state and when saturated. He states that even granite always contains a certain percentage of water, and in the dry state is rarely without a pint and a half in every cubic foot. Sandstone, however, even that deemed fit for building purposes, may contain half a gallon per cubic foot, and loose sands at least two gallons. When water presents itself in any part of such material, it readily diffuses itself by the power of capillary attraction, by which, it is observed on some walls in Paris, it ascends thirty-two feet from the foundations. Walls of such absorbent constructions are subject to rising wet by capillary attraction, as well as to the driving wet of rain or storm. To guard against the driving wet on the coast expensive external coverings of slate are used. But these do not stay the rising wet. This wet, having to be evaporated, lowers temperature. Damp walls of houses cause rheumatism, lower strength, and expose the system to other passing causes of disease.

In London it is admitted that houses, even of the better class, cannot safely be inhabited in less than nine months. Indeed, registrars of deaths are aware that an extra death-rate is, after all, usually attendant on their first occupation. The majority of bent figures in our villages are due to the infliction of rheumatism from damp.

In Paris, notwithstanding its peculiarly dry subsoil and its drier climate, the sanitary, or insanitary, evils of the common architect's constructions appear to be even greater than in London. I was assured by a Parisian builder of considerable experience that it was unsafe to occupy any new house in Paris in less than a year after its construction, and that there were houses in Paris which would never be dry "in their lives," and would always afflict their occupants.

THE ENGAGEMENT IS BROKEN.—Penhallow, of a very blue Boston family, visits the home of his Connecticut *fiancée* for the first time, sees a picture upside down. She—Most everybody is surprised at the way dear old papa's portrait is hung; but you see he made his money clowning for Barnum, and mamma thought he'd be more comfortable in his natural position.

Jottings from the Journals

"Th' ingredients of health and long life are
Great temperance, open air,
Easy labour, little care."—*Sir Philip Sydney.*

Exercise, Work, and Diet.—One other word I should like to say on the point of exercise. "You do not take enough exercise," is the common reproach made to the complaining patient; and forthwith off he rushes, to bring into sudden play muscles long disused and limbs that have forgot their cunning, till he finds to his angry astonishment that tired, not refreshed, and aching in every joint and bone, he has but made himself more incapable of work than he was before. No doubt the longer a man can keep up youth's standard of violent delights the better for him; but few men can do that with impunity, still fewer can go back to it when once the touch has been lost; the attempt is generally as dangerous as it is ridiculous. For myself, I frankly own that I do not believe that hard exercise of the body is compatible with hard exercise of the brain. Nothing, I am firmly persuaded, brings a man to the end of his tether so soon. The exercise the brain-worker needs is the exercise that rests, not that fatigues. He needs to lull, to soothe his brain; and this he will do best in the fresh air, by quiet, and by the gentle employment of the limbs and muscles that have been idle while he worked. It is this need, as it seems to me, that tells most strongly against London. What rest and refreshment is there for him who, after a hard spell of work at his desk or in his studio, when

"All things that love the sun are out-of-doors,"

goes out into the noisy, crowded, reeking street? No rest comes to him from any beautiful sight, no rest from any beautiful sound; the air is no fresher than that he has left. Everywhere is a distracting sense of hurry, of the fever and the fret of existence. Like the weary Titan, "with labour-dimmed eyes" and ears, alas! not deaf, he goes staggering on to a goal that daily grows more certain and more near. But here, again, I speak only of my own experience, which I would not for the world essay to make the wisdom of others. In all these things, then, I believe a man must be his best physician. And, beyond the reasons mentioned, he must be so because only he can know what system it is possible for him to follow. Go abroad, says one doctor; get a horse and ride, says another; put your work away and take a thorough holiday, preaches a third. Golden counsel! but, alas, wind-dispersed and vain to so many of us! How shall those obey it to whom the daily bread comes only with the daily toil, and how many of these there are among it the rich, idle world never dreams!

". . . The fear that kills;
And hope that is unwilling to be fed;
Cold, pain, and labour, and all fleshly ills
And mighty poets in their misery dead."

That is the life's experience of many and many a man who bears a cheerful front enough to his fellows. While he has health and strength, while the sun is still in the heavens, he can bear the burden, uncomplaining if unresting. But as the day wears on, and the shadows grow, the question of the future grows with them, What shall be his fate when hand and brain can work no more? Happy as he may be in his work now, contented, prosperous, never can he wholly put by the thought,

"But there may come another day to me—
Solitude, pain of heart, distress, and poverty."

Such a one can put off that hour by no holiday pastimes which to the idle man of pleasure are a mere weariness of the flesh. But he can, so far as human will avails, put it off by hoarding his strength and health; and this he will most surely do by the observance of one simple rule, framed for man's conduct thousands of years before our wisdom discovered that the pancreatic juice converts starch into sugar, and that levulose is isomeric with glucose — the simple rule of moderation.— *Macmillan's Magazine.*

Threatened Scarcity of Water.—The appendices to the Weekly Weather Reports for the year 1887, recently published by the Meteorological Office, contain some interesting details relative to the rainfall. It is shown that the mean rainfall for the whole of the British Islands during 1887 was only 25·8 inches, whereas the mean for the twenty-two years 1866 to 1887 was 35·3 inches, so that there is a deficiency of nearly 10 inches over the whole area of the British Islands, or 27 per cent. less than usual. In the wheat-producing districts, which comprise the east of England and Scotland, the south of England, and the Midland counties, the fall during 1887 was 21 inches, and the average value for twenty-two years is 28·5 inches, showing a deficiency in these parts of the kingdom of 7·5 inches, or 26 per cent. less than usual. In the principal grazing districts, which comprise the west of England and Scotland, as well as Ireland, the fall in 1887 was 30·5 inches, and the value for the twenty-two years is 40·0 inches, showing a deficiency of 11·5 inches, or 27 per cent. less than the average. In the north-west of England the rainfall for 1887 was only 24·9 inches, which is 15·7 inches or 39 per cent. less than the average, and in the south-west of England the fall was 28·3 inches, which is 16·6 inches or 37 per cent. less than usual. Last year was the driest of any year since 1866, and this feature was common to all parts of the United Kingdom; the amount of rain measured was only about one-half of that recorded in 1872, which was the wettest year of the period. If the comparison is confined to the last ten years, the deficiency is nearly as marked, and 1887 is still found to be about 25 per cent. below the average, but the greatest deficiency in this case occurs in the Midland counties, where it amounts to 36 per cent. of the average. The reports issued by the Meteorological Office for the first five or six weeks of the present year show the deficiency of rainfall still to be augmenting, and even more quickly than in any period last year. In the Midland counties the rainfall to February 6th was only 0·6 inch instead of 2·9 inches, so that the deficiency from January 3rd is as much as 79 per cent. of the average fall; and at Hereford, where the total fall is only 0·29 inch, the deficiency is 90 per cent. of the average. In the east of England the deficiency is 64 per cent., in the south-west of England 61 per cent., and in the north-west of England 58 per cent. There has been a deficiency of rain in all districts of England each week for seven consecutive weeks since December 19th, with the exception of a single district (England, N.E.) in one week, and since the beginning of October there have been but four weeks in which the excess of rain was at all general. Out of fifty-seven weeks since the commencement of 1887 there have been but ten in the south-west and east of England with an excess of rainfall, and only eleven in the north-west of England. With these facts to hand, there seems reasonable ground for alarm being felt in some localities at the threatened scarcity of water.— *Nature.*

Our Letter-Box

"Conference [maketh] a ready man."—*Bacon.*

NOTICES TO CORRESPONDENTS.

All Communications for the Editorial Department (including Books for Review, Specimens of Sanitary Appliances, &c.), to be addressed to "The Editor of Health," 2, Paternoster-square, London, E.C. *Those intended for the Publishing Office to be sent to* Mr. A. P. Watt, The Publisher, *at the same address.*

RULES FOR CORRESPONDENTS.

Owing to the mass of letters which reaches us each week, we respectfully direct the attention of Correspondents, desiring replies in the Letter-Box Department of Health, to the following rules:—

1. All questions are answered free of charge in the columns of Health.
2. All letters must be legibly addressed to "The Editor of Health, 2, Paternoster-square, London, E.C.," *and to no other address.*
3. Questions to which answers are desired by post, are so replied to solely at the Editor's discretion. If no answer is sent by post, the query will be replied to in the "Letter-Box" columns of Health. A stamped addressed envelope must accompany all queries to which a private reply is desired.
4. Addresses of physicians and surgeons will, as heretofore, be forwarded free to Correspondents on their enclosing a stamped addressed envelope for reply.
5. Correspondents are requested to write on one side of the paper only, and to make their inquiries as brief as may be consistent with clearness.
6. From the necessity of sending Health to press early in the week, no Correspondent can be replied to in the "Letter-Box" columns in the same week in which the inquiry is received. Replies crushed out of any issue will be found in the succeeding number.
7. No Post Cards must be used in sending queries. Violation of this rule deprives the sender of the privilege of a reply.

LETTERS TO THE EDITOR.

CANCER AND SMOKING.

Sir,—It seems to me that your correspondent, "Nerve," has brought himself to believe that the chief cause of cancer in this country is smoking, and he would seem to imply that if a special law was passed prohibiting the use of the cigar, the pipe, and tobacco generally, there could not fail to follow a reduction in the mortality returns from this terrible disease. Unfortunately, it is impossible to deny that there is some connection between the habit of smoking and the appearance of cancer; but it is also very easy to represent this connection as being a great deal more extensive than is known to be the case. It is essential to bear in mind that the untoward appearance of cancer on the lip amongst those who are predisposed to the disease, in whom smoking is an inveterate habit, mainly occurs in the working classes. It is an extremely rare occurrence to meet with cancer of any part among the better classes which could be said to have any connection with the habit of smoking. And this is precisely that which we should expect to be the case—the working man always uses a rough clay pipe and the strongest tobacco; while better-class persons use pipes with smooth vulcanite, bone, or meerschaum stems. A parallel case to this may be mentioned in that form of the disease which is called "chimney-sweep's cancer." Doctors admit that the minute particles of soot act as sources of irritation when they are confined within the deep interstices of the skin of certain parts, and the result is the development of the disease. But chimney-sweep's cancer is only seen in followers of this particular form of employment, and for the same reason it is mostly amongst working men that cancer on the lip is seen. An interesting series of papers on cancer were published in Health about two years ago, from the pen of Mr. Percy Dunn, F.R.C.S., who has paid a great deal of attention to this subject, and to these I would refer those of your readers who are desirous of ascertaining the truth in regard to the terrible disease under discussion.—I am, sir, yours faithfully,

Observer.

QUERIES AND ANSWERS.

REPLIES: GENERAL, SANITARY, AND MEDICAL.

[Readers of HEALTH will kindly note that when back numbers of the journal are desired, the letters containing such requests and stamps for the numbers should be addressed to the PUBLISHER of HEALTH, 2, Paternoster-square, London, E.C., and *not to the Editor*.]

G. B.—Allow one of the Chlorate of Potash tabloids (Burroughs, Wellcome & Co.) to dissolve in your mouth occasionally. Rest after your meals.

PETER HAY.—Look well to your teeth, and use Dr. Pierre's Tooth Powder and Eau Dentifrice as a healthy mouth wash.

BONUS.—Wash the parts with Bayley's Soap, dusting on a little Fuller's Earth after washing. We only send addresses of medical men on receipt of stamped addressed envelope.

A. NAPIER.—You suffer from "blackheads," which are filled-up skin-glands. Press out the matter from the glands, and then sponge the parts with a little of Bayley's Eau de Cologne. They are an evidence of defective skin-action. Take warm baths, use brisk friction to the skin, wash with Bayley's Soap, and avoid excess of fatty foods.

PARENTAL.—Take a claret-glass of Vin Mariani (Roberts & Co., New Bond-street, London, W.) before your meals twice or thrice daily: and try a cold or tepid sponge bath each morning.

M. A.—Use Stern's "Pumiline" as an inhalation for colds. See full notice of this remedy in HEALTH, No. 252.

JOE.—If acidity is present you may try the following:—Subnitrate of bismuth, six grains; carbonate of magnesia, ten grains; powdered gum arabic, twenty grains. Mix to form a powder. Stir in a cup of boiled milk, and, when cool, stir up again before being swallowed. To be taken twice daily after food.

MAPPY.—Try a dose of Lamplough's Pyretic Saline on rising in the morning, and follow out the other food-directions already given you. You will get quite well in time. Take a cold sponge bath each morning, and use brisk friction thereafter. See also that you take plenty of open-air exercise.

PRENTICE HAND.—Quacks write in the style you name, because they succeed in terrifying their victims into consultation by causing them to imagine they are afflicted with disease.

FRANK DE LISLE.—Read the pamphlet, "A Lecture to Young Men" (post free, for 1s. 1d., from Mr. Renshaw, 356, Strand, London, W.C.), and study what is there said about cases like yours. You are only low-spirited, and the pamphlet will serve to ease your mind.

O. A.—You should wear an elastic stocking, or try a bandage, to be had from Lindsey & Co. (See our advertising columns.) As aids to recovery, see that you sleep with your feet elevated, or elevate the foot of your bed. Avoid constipation especially, and when at rest have your feet elevated slightly.

A. PEARD.—You should try applying a little aromatic vinegar cautiously each day to the wart, and note if it disappears; but from your description of the growth we are inclined to think it is probably a bunion. Look to your boots and stockings, avoid all pressure, and wash your feet daily with Bayley's Soap and tepid water, dusting a little Fuller's Earth into your stockings.

L. L.—The following hair lotion should be tried:—Quinine sulphate, twenty grains; glycerine, one fl. oz.; cologne, two fl. oz.; bay rum, two fl. oz.; rose water, eleven fl. oz. Rub the quinine with the glycerine, and add the other ingredients in order named. The addition of fluid extract of jaborandi is recommended to stimulate the growth. Keep the hair short, and wash once a week with Bayley's Soap and tepid water.

ARCADES AMBO.—The review of Dr. Ebstein's work on Corpulence appeared in HEALTH, No. 57. Follow out the diet rules prescribed in the volume named. Send 4½d. in stamps to the Publisher of HEALTH for the number in question.

DAVID RAE.—Try applying to the face a lotion made by adding one part of Friar's Balsam to six or seven parts of rose water.

NORTH POLE.—Clothe warmly and avoid chills, and take the following:—Chloride of ammonium, two drachms; spirits of chloroform, one drachm; simple syrup, three drachms; water to make up six ounces. A tablespoonful to be taken in water every four hours.

P. M.—Apply to the face a little pure Lanoline, to which your chemist should add Powdered Calamine (Ver), in the proportion of one drachm to one ounce of Lanoline, thus making a thin paste, easy of application at night. Use Lanoline Soap (Burroughs, Wellcome & Co.'s).

LEX.—Look to the ventilation of the bedroom. Bad ventilation is a frequent cause of a wearied feeling in the mornings. For the rest, let him take plain food, and a cold or tepid sponge bath each morning.

S. X.—Wash the hair twice or thrice weekly for a time with a pint of hot water (soft) in which a piece of lump ammonia the size of a Brazil nut and a slightly larger piece of borax has been dissolved. Allow the fluid to cool, and use as a wash.

CECILE.—Try half a claret-glass of Mariani's Cocoa Wine (Roberts & Co., New Bond-street, London, W.) before or after your meals, thrice daily. This is an excellent stimulant and tonic. Food to be nourishing: but the patient should take little solids for a time.

T. GILL.—The following mixture might be tried:—Carbonate of ammonia, one drachm; bicarbonate of potass, a drachm and a half; infusion of chiretta, six ounces. A tablespoonful thrice daily before food.

PORTER.—Take the following:—Carbonate of bismuth, ten grains; bicarbonate of soda, five grains. Mix. One such powder to be taken thrice daily, half-an-hour before meals.

CARRIE.—Read a full article on acne or "Blackheads" published in HEALTH No. 199, to be had from the Publisher, price 2½d., post free.

J. E. W.—Avoid all indigestible foods, such as cheese, salt meats and pastry; and limit your tea and coffee. Eat stale bread only, and take Brand's Beef Essence, white boiled fish, milk, peptonized with Fairchild's Powders, milk puddings made with Marshall's Tritola, and like foods. Rest rigidly after each meal; masticate your food thoroughly; and when flatulence troubles you, try five drops of Pure Terebene (Burroughs, Wellcome & Co.'s) taken on a piece of sugar. In bed wear a sleeping suit of woollen materials, such as is made by Messrs. E. Ward & Co., of Bradford, and sleep in stockings.

SUFFERER.—Why do you not take the trouble to read the Rules for Correspondents legibly printed each week at top of "Letter Box" columns? If you comply with rule four we will attend to your request. It is evident you have been "wasting your substance" on quacks. The persons you name in Birmingham form one of the most notorious quack firms in the kingdom. Little wonder quacks flourish when they find dupes ready to hand like yourself. How much money have you spent on them in your "eleven years" of trial? Read the pamphlet, "A Lecture to Young Men" (post free for 1s. 1d., from Mr. Renshaw, 356, Strand, London, W.C.), and note what is said therein about the fancied ailment you have been treated for.

NERVOUS EXHAUSTION.

PULVERMACHER'S World-Famed GALVANIC BELTS for the Cure of NERVOUS EXHAUSTION and DEBILITY, have received testimonials from three Physicians to Her Majesty the Queen, and over Forty Members of the Royal College of Physicians of London.

The distressing symptoms of NERVOUS EXHAUSTION and DEBILITY are speedily removed by means of **PULVERMACHER'S world-famed Galvanic Belts,** which are so arranged as to convey a powerful electric current direct to the affected parts, gradually stimulating and strengthening all the nerves and muscles, and speedily arresting all symptoms of waste and decay.

Dr. VINES, Fellow of the Royal College of Physicians, writes 19th September, 1885: "Having used MR. PULVERMACHER'S BELTS for many years, in the course of medical practice, I am in a position to speak of their great value as a curative agent in cases of nervous disease or functional malady where Electricity is likely to be serviceable. I am entirely convinced of their efficacy."

Dr. C. HANDFIELD JONES, F.R.C.P., F.R.S., Physician to St. Mary's Hospital, says: "I am satisfied that MR. PULVERMACHER is an honest and earnest labourer in the field of science, and I think he deserves to meet with every encouragement from the profession and scientific men."

Dr. GOLDING BIRD, M.D., Physician, Guy's Hospital, says: "I can hardly recommend MR. PULVERMACHER'S INVENTION too strongly to the notice of my medical brethren."

For full Price List and particulars, see New Pamphlet, "**GALVANISM: Nature's Chief Restorer of Impaired Vital Energy.**" Post Free from

PULVERMACHER'S
GALVANIC ESTABLISHMENT,
194, Regent-street, LONDON, W.

R. Lyon.—1. Messrs. Burroughs, Wellcome & Co.'s, Snow-hill Buildings, London, E.C., to be had of any good druggist in your city. 2. Vin Mariani is a good tonic in all cases of debility. 3. It agrees better (with many persons) than the other tonic you name.

Asurius.—1. It depends on how far back you desire the apparatus you name to proceed. If there is any difficulty, try the effect of using a little pure vaseline as a lubricant. 2. No barrier at all.

G. Duncan.—There is no such thing as "an organ of firmness" in your brain, or in that of any other person. Phrenology is an effete and exploded myth. Wash your head once a week with Bayley's Spermaceti Soap (17, Cockspur-street, Pall-mall, London, S.W.) and tepid water, and rub in each alternate morning a little glycerine of borax to the roots. Use a soft brush only; and use, for the nutrition of the hair, simply a little brilliantine.

Jack.—1. The appliances you name are quite worth the money asked. Your dealings "with quacks," as you put it, must have been of a very mild character, if you have not been mulcted of five times the amount named. 2. No drugs should be taken continuously, as you have taken the pills you name; and even if you have experienced the symptoms you mention, you should long ere now have learnt from the pamphlet you perused that such symptoms are in no case those of disease. Simply look well to your general health; avoid late suppers, and do not sleep on your back. Probably, yours is a case in which no treatment whatever is needed, and your mind is to blame for any disturbance of your bodily functions. 3. If you over-exert yourself physically, you are certain to produce the symptoms you name. 4. Certainly not; such fruits form a perfectly healthy diet. If you take our advice, you will simply keep your mind from brooding over your fancied troubles, and live simply and naturally. You will induce disease and ill-health by worrying over what does not exist.

Billie.—1. Yes; because there is a greater liability to cold and chill afterwards. 2. Certainly; use Bayley's soaps. 3. Very risky, we should say, considering the temperature. You will get all the good of ventilation by much less rigorous measures. 4. From 60 degs. to 65 degs.—remember that in the early morning your own temperature falls.

Sirrah.—See that the child does not take any food or fluids for at least an hour before bedtime. Limit his sugar, and avoid tea or coffee. Give him, twice during the day, four grains or so of citrate of potash in half a tumbler of water, between his meals, and see that no constipation exists. Bear in mind that the symptoms you name often arise from the irritation caused by worms.

Thoughtful.—1. None whatever. 2. No. 3. No: many "M. P.s" seem to have anything but "well-developed brains."

G. B. W.—1. If the advice given you is doing good by all means follow it up yet awhile. 2. If you feel cold, there can be no objection to a comforter worn round the neck. 3. In this climate, any person not wearing woollen underclothing, is very foolish. Wear Messrs. Ward & Co.'s (of Bradford) Sanitary Woollen Underclothing. 4. Touch the warts daily with a little aromatic vinegar.

Edina.—It is probable that the eradication of the hairs, partially, at least, may be necessary for a cure in your case. Try, however, first of all, the plan of washing the affected parts regularly with Blue Gum Tree Soap and tepid water. If not cured, write again.

T. Jackson.—A paragraph on the subject of the morphia-mania will be found in Health, No. 248, page 221.

Country Boy.—[Your letter was erroneously addressed to the "Publisher," Do you imagine the Publisher conducts a journal?] You should try the effect of shaving. Wash with tepid water, and for shaving use Bayley's Shaving Tablet (17, Cockspur-street, Pall-mall, London, S.W.) to avoid irritation.

W. H. M.—Use Stern's "Pumiline" (see notice in Health 252) as an inhalation at night, and after your meals take a dessertspoonful of Scott's Pure Cod Oil Emulsion, thrice daily.

Anxious.—We cannot undertake to advise you unless you supply us with fuller details regarding the cause of your ailment. Your description thereof may apply to various and different ailments.

Ferny.—You should certainly see a surgeon and take his opinion regarding treatment. There is nothing much wrong, evidently, but such an opinion will put you in the way of preventing any complications. Attend to Rule No. 4 for Correspondents, and we will send you address of a competent London authority.

R. G. H.—Use the ointment recommended to "Lorna," in Health No. 247, and apply this ointment night and morning. Internally, take twenty drops Fer Bravais in water, after your meals, thrice daily, as a tonic. If not cured, write again.

Warrior.—You do not need to be anxious in any way. Simply live generously, but plainly; continue to use the belt, but at gradually increasing intervals. Take a tepid sponge bath each morning; plenty of open-air exercise, and a wine-glass of Vin Mariani (Roberts & Co., New Bond-street, London, W.), after your meals twice daily, as a tonic, for a short time.

Spes.—See advice given to "Tempus Fugit" in last week's Health.

W. J. J.—Read the pamphlet, "A Lecture to Young Men" (post free for 1s. 1d., from Mr. Renshaw, 356, Strand, London, W.C.), and note what is therein said about cases like yours. You need no medicine; simply live carefully, take plenty of open-air exercise, and guard against any continuance of the habit.

Bob.—Try Dahl's Cakes (advertised in our pages) as a remedy for constipation.

B. T. H.—See advice given to "Joe" in the present number. In addition, avoid salt meat, sweets, pastry, cheese, and other indigestible foods. Rest after your meals, and see that you masticate your food thoroughly.

S. M.—1. Bokö̈l may be had from Davis, Bergendahl & Co., Quayside, Newcastle-on-Tyne. Take a pint bottle of this to your dinner. 2. Chewing tobacco is a filthy and unhealthy habit, and the cause of much ill-health. If you smoke in strict moderation, it may do no harm.

T. H. Brockell.—No harm could result, but you do not need to use any chemicals at all. Simply clean the cistern by flushing it, and rub with a soft cloth. Do not use a hard brush, as that is apt to scratch and expose fresh surfaces of the lead.

Penitent.—You will find full information and advice in the pamphlet recommended to "Frank de Lisle" in the present number.

WHAT THEY SAY AND WHY THEY SAY IT.

When a person has been saved from the agonies of a terrible and untimely death, or, indeed, when he has avoided intense suffering of any kind, it is only natural that he should be grateful, and desire that others should learn of and be benefited by his fortunate experience. Such has been the inspiration of every testimonial which Messrs. H. H. Warner have given to the public, and the following experiences are published with the hope that the afflicted may be benefited:—

The Rev. W. Cave, Fulford-road, York, says: "I have suffered from kidney complaints for past thirty years. I have tried various medicines, and have been under the care of physicians, who advised me not to hope for relief for a number of years. I learned of Warner's Safe Cure from a personal friend. He advised me to try it, and I did so, and I must say with the greatest success, as I have received relief. I find that I sleep much better, and do not pass the large amount of water that I did previous to using the medicine. I have been in the ministry sixty-three years, and have recommended the medicines to all whom I have met who have suffered from similar complaints."

Mr. F. Welch, 12, Wordsworth-street, Marsh-lane, Bootle, Liverpool, writes: "I have much pleasure in testifying to the good effects of Warner's Safe Cure. After some years of suffering from severe liver complaint and other complications arising therefrom, and trying all kinds of so-called remedies from the medical profession and others, I was persuaded by a friend to take Warner's Safe Cure. One bottle gave me great relief, and after taking five bottles, I am thankful to say a perfect cure was effected."

Mr. B. Newbald, Raglan-terrace, Whitby, says: "For upwards of ten years I suffered much, and at times severely, from dyspepsia and liver complaint, which rendered my existence a complete burden. About eighteen months ago I broke down altogether, and both my medical man and my friends thought that things would go hard with me. I was confined to my house nine weeks, and unable to work altogether about four months. During the time of my worst symptoms I was recommended Warner's Safe Cure, and words fail to express the difference in me and my feelings after taking five or six bottles. I persevered in the use of the Safe Cure until I had taken twenty bottles, when I found myself better than I had been for years before."

Mr. A. Aldous, 61, Hatton-garden, London, E.C., writes: "A sister of mine, having suffered much from dyspepsia and loss of appetite was induced to try Warner's Safe Cure, and found the remedy most efficacious. You are at liberty to publicly use this testimonial.

Statements like the above are all the more valuable because they are volunteered, and are simply the grateful expressions of people who have been benefited by this wonderful remedy. Thousands are suffering needlessly who might be cured if they would but act upon the advice given above. Warner's Safe Cure can be procured of all Chemists, at 4s. 6d. per bottle, or of H. H. Warner & Co., 86, Clerkenwell-road, London, E.C.

B. D. E.—1. The tonic may be taken before or after meals, as you may find most agreeable. 2. We scarcely understand your question. The breath is always hot—it is of the same temperature as the blood.

R.—See advice given to "O. A." in last week's Health. You must trust to diet, as the Cascara Cordial is only an aid to cure, and not in itself a perfect remedy. Give Dahl's Cakes (advertised in our pages) a fair trial.

T. W. Morgan.—You might give the system a fair trial. We do not allege that these preparations will suit every case. See diet-hints given to "D. L." in last week's number.

Aristotle.—Continue the plan of bathing the parts with tepid water, to which two or three parts of Hazeline (say to ten parts of water) have been added. We fail to see that there is anything unusual in what you make out to be an ailment. In some persons the skin-tissues are more delicate than in others. Dust a little of Woolley's Sanitary Rose Powder on the parts after washing.

Alfred James.—In your case it appears to us there is nothing required save continued attention to diet, exercise, and habits at large. Why should you desire such treatment as you indicate, when, according to your letter, your ailment merely resolves itself into a want of power of mental concentration. All we can say is, that improved physical health will probably benefit you mentally, and if you require a simple tonic at all, try that recommended to "Cecile" in the present number.

Alf. Bladen.—The condition you name is somewhat unusual. The physicians you have consulted should surely have been able to advise you on the points named in your letter, while as to the last point you mention, the matter is one for a solicitor's opinion. We hardly think the law can give you any assistance, and our only advice to you is to consult some eminent physician accustomed to treat such ailments.

A Mother.—We cannot recommend any such powders for children. They contain narcotics. Try Woodward's Gripe Water, which is entirely safe and well adapted for such a case. Read Miss Jex Blake's "Primer of Infancy" (Macmillan & Co.) or Dr. Joll's "Hygiene of Infancy," and note what is therein said regarding infant-management. Teething should be capable of being managed safely and well, without drugging the child at all. Attend to its digestion and to the skin, giving warm baths when necessary.

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Is three times as efficacious as the plain Oil.

It is almost as palatable as milk.

It does not nauseate or produce a loathing for food like the plain oil.

The Hypophosphites and Oil are so skilfully combined, that they are much more potent in building up flesh and strength than if taken separately, and **SCOTT'S EMULSION** is to-day the best remedial agent for the cure of

CONSUMPTION, CHRONIC COUGHS, BRONCHITIS, ANÆMIA, WASTING DISEASES OF CHILDREN and GENERAL DEBILITY.

Physicians universally prescribe it in preference to the plain oil, having seen its remarkable curative effects.

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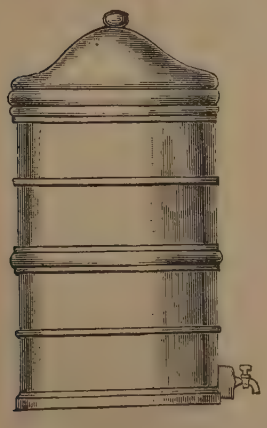
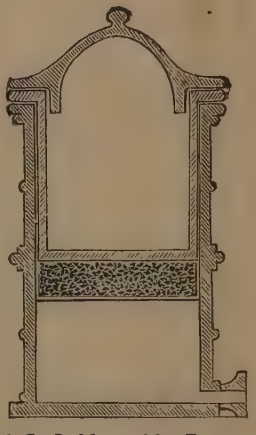
HOWIE'S PATENT WATER FILTER.



In this Filter the water percolates slowly through Porous Fire Clay, then through patent Porous Mineral Charcoal, and, finally, through Porous Clay, thus receiving Three Filtrations. This Filter can be cleaned in a few seconds by simply lifting out the Porous vessel, and brushing or washing off the impurities which collect on the surface. It is very simple, effective, easily managed, and cheaply maintained, and not liable to become a breeding-place for Bacteria or other germs, or a reservoir for *giving out* impurities to the water passing through it, as most Filters do after a few weeks' use.



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See page 354.

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EDITED BY DR. ANDREW WILSON, F.R.S.E. &C.

VOL. X.—No. 256. FRIDAY, MARCH 2, 1888. PRICE TWOPENCE. *Registered at G.P.O. as a Newspaper.*

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[The above letter, dated Sept., 1886, is from a medical gentleman in extensive practice in a large city in the North of Ireland.]

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HEALTH

EDITED BY

DR. ANDREW WILSON, F.R.S.E., &c.

LONDON: *FRIDAY, MARCH* 2, 1888.

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Notes by the Way

BY THE EDITOR.

"Health is the foundation of all our physical happiness."—*Herder.*

I OBSERVE that the Local Government Board have issued a new Order dated February 3rd, 1888, regarding revaccination. The old Order, as a contemporary remarks, limited the performance of revaccination by a public vaccinator to those who had attained the age of fifteen years and had not previously been revaccinated, except in the face of immediate danger from small-pox, when the limit might be reduced to twelve years. It has, however, become more and more evident of late years that even an efficient vaccination tends to lose much of its protective power before the age of puberty; and hence, as was foreshadowed by Mr. Ritchie in his recent speech at Sheffield, the age limit is now reduced to twelve years under ordinary circumstances, and to ten years in case there be any immediate danger of small-pox.

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THE demand for revaccination, continues the account, at the public cost is not imperative upon the public vaccinator unless he is of opinion that the proposed operation is not for any sufficient medical reason undesirable; and he is further empowered to refuse it, provided he is unable to afford lymph for the purpose without interfering with the performance of primary vaccination in his district, the latter operation very properly taking precedence in point of importance as a protective against small-pox. The new Order also extends the meaning of the term public vaccinator to the medical officer of any workhouse, separate workhouse school, or workhouse infirmary, provided he performs vaccination under contract in any such institution. And, further, it also enables the public vaccinator to a workhouse to revaccinate children under his charge at any age below the ages specified in the Order, provided he records in his register the opinion that he deems their primary vaccination to have been inadequate.

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A CORRESPONDENT of the *Lancet* directs attention to some remarks published by the *Cologne Gazette* on the confusion, in some night manœuvres in Russia, resulting from a large number of the troops being affected with *Hühnerblindheit*, or night-blindness. The affection is well known to result from imperfect nutrition. The following account, given by Dr. Meissner, sufficiently demonstrates the nature of the affection:—In a small town of Podolia more than 100 cases of the complaint occurred. It was the time of the Greek fast, when the inhabitants eat no animal food, but live chiefly on bread and groats prepared with oil.

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When Easter came they ate the liver of a blackcock or black swine, and were cured in a few days. Meissner examined, both by day and night, many of those affected, but perceived nothing particular in their eyes, except great immobility of the pupils. They maintained they were in perfect health, and would recover their vision in a fortnight. Two of those he examined began to eat liver and animal food, and saw as well as ever on the third day. By the following Sunday all those affected were completely cured. The affection occurs sometimes in nursing women, who are ill-fed, amongst the poor.

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AMONG the almost numberless methods of removing particles from the eye, the following is recommended as an efficient means: Make a loop by doubling a horse-hair. Raise the lid of the eye in which is the foreign particle; slip the loop over it, and placing the lid in contact with the eyeball, withdraw the loop, and the particle will be drawn out with it.

✣ ✣ ✣

ONE of the best and simplest remedies for torpid liver or biliousness is said to be a glass of hot water with the

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AND OF ALL CHEMISTS.

juice of half a lemon squeezed in it, but no sugar, night and morning. A person to whom this was recommended tried it, and found himself better almost immediately. His daily headaches, which medicine had failed to cure, left him; his appetite improved, and he gained several pounds within a few weeks. This is so simple a remedy that any person thus afflicted may give it a trial, as it cannot possibly do any harm.

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To keep frost, &c., off plate glass windows, keep the inside air dry, or inner sash tight, so that the air in window enclosure will be cold, and ventilated from the outside. A partial remedy is to have ventilating openings in the top of the window casing.

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A useful hint to ambulance students is given by Mr. R. Davy, Surgeon to the Westminster Hospital, in the following words:—"Many of our English houses are extremely small, especially about the staircase, which is frequently crooked and angular; no stretcher carried by two porters can pass—no chair of ordinary dimensions can pass, either. The means that I have successfully adopted is to make use of a good strong jack-towel as a support to the patient in getting up these defiles. The carriage upstairs must be done with care; but the jack-towel will twist a little, and that little makes all the difference. By passing the loop of a towel across the patient's chest, beneath his arm-pits, he can be securely bound to the back of the leading porter; generally speaking there is no fear of falling, but far more of any blow or injury to the leg in passing corners."

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Dr. R. W. St. Clair, in the *Medical Summary*, tells how to remove a cinder or particle of dust from the eye, and illustrates as follows: "A few years since, I was riding on the engine of the fast express from Binghamton to Corning. The engineer, an old schoolmate of mine, threw open the front window, and I caught a cinder that gave me the most excruciating pain. I began to rub the eye with both hands. 'Let your eye alone and rub your other eye;' this from the engineer. I thought he was chaffing me, and worked the harder. 'I know you doctors think you know it all, but if you will let that eye alone the cinder will be out in two minutes,' persisted the engineer. I began to rub the other eye, and soon I felt the cinder down near the inner canthus, and made ready to take it out. 'Let it alone, and keep at the well eye,' shouted the doctor *pro tem.*

✣ ✣ ✣

I did so for a minute longer, and, looking in a small glass he gave me, I found the offender on my cheek. Since then I have tried it many times, and have advised many others, and I never have known it to fail in one instance (unless it was as sharp as a piece of steel, or something that cut into the ball and required an operation to remove it). Why it is so I do not know. But that it *is* so I do know, and that one can be saved much suffering if they will let the injured eye alone and rub the well eye. Try it."

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Now that the subject of "Cancer" appears to be publicly discussed—medical press objections to public instruction notwithstanding—the letter on "Smoking and Cancer" which appeared in last week's Health, and the replies thereto published in the present number, will be perused with interest. It is eminently desirable that all such social questions should be fully and freely discussed, and I anticipate that the correspondence in these pages on smoking in relation to cancer will serve to allay any fears and alarm which may have been caused by the crude suggestions of the anti-tobacco party.

Original Essays

"Life is not to live, but to be well."—*Martial.*

WOMEN AND PLAY.*

By Honnor Morten.

If women are but half-hearted workers, how much more so are they poor players? Their ideas of games are weak and insipid, and those sports which teach patient endurance, skill, and courage are generally left out of their list of amusements. The hearty worker is most often the spirited player, and as the intellectual exercise of girls is chiefly confined to acquiring the French language and a knowledge of music, so is their physical exercise chiefly confined to dancing lessons and walking two and two along the pavement of suburban roads. It is only during the last few years that gymnasia or playgrounds were ever provided for girls' schools. Even now these adjuncts are usually supposed to denote a mixed establishment, and not the proper place for a young lady belonging to the upper classes to receive her education. In the ordinary type of private school there is not the slightest outlet for the natural spirits of a healthy girl. The least attempt at a race or bolster-fight is regarded as undignified, and listless inactivity is looked on with favour as model behaviour.

These things are gradually changing. The High Schools are working a revolution of old-fashioned sentiments, and women have welcomed lawn-tennis with gratitude, as the first exciting and athletic game which society has permitted them to enjoy. But already they are dropping behind the men, and soon the best form of tennis will be as much beyond them as cricket is. The reason is not far to seek. At any garden party you can hear the remark that costumes cannot be disordered, or faces flushed, by hearty participation in any game. The players of the fair sex may carry a racquet and return balls that fall within easy reach, but they will not ruin their appearance by those rapid movements and strong strokes which alone give zest to tennis. They leave all the best of the game to the men, as they leave most things that are worth doing, and require skill and dexterity.

There is not the slightest reason why a woman should not be a good tennis player, and yet be prettily clad; but of course she must forego the extravagancies of fashion. A little ingenuity will construct a gown which will permit of easy movement and yet be graceful; but this gown must not have yards of wobbling steel in the back, nor tight sleeves; nor be crowned by a tremendous hat which momentarily threatens to topple over, and is only secured by a pin which drags at the hair and causes headache. If a woman will be dressed in the height of fashion, she deliberately deprives herself of most of the innocent and healthy enjoyments of life; and we can only hope she finds some recompense for her loss. Yet neither dress nor vanity are entirely to blame

* See article on "Women and Work," in Health, No. 254.

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for the lack of energy displayed by women. From their youth up they have never been taught the dash and courage which boys learn in every sport. They have never endured the hardy discipline of the cricket or hunting field. They cannot be got to believe that rules are as necessary in play as in earnest, and that women, as well as men, should be thorough in all things. For one woman who can skate well, you can always count ten good men skaters, and yet the cutting of figures on the ice is a graceful pursuit. But no: women have not the courage to throw themselves on the outside edge of the skate, nor the daring that would risk a fall in learning to cut a three. Fashion says a girl should skate with her hands in her muff, or held by some gentleman admirer; and this verdict is meekly accepted, and women go straight forward in skating, if in nothing else.

In the hunting field it is the same story: a woman must have an escort, and only follow for a short while, till some hedge or brook gives her an excuse to turn back. How often a girl has her own horse she could hunt, but has no mount for a groom, and no friend on whom she cares to act as a drag. In this case, she usually has to drive to the meet, and watch the proceedings from a carriage, as though she were paralysed in body instead of in mind. And the woman who does ride over a few fields seldom knows anything of the science of the sport she is following: *she* never gets up in the cool grey of a crisp October morning to go cub-hunting, and watch the young hounds at work. If she can pick up enough technical jargon to give her more timid sisters the idea that she is "fast," her aim is complete; and she may be a constant annoyance to the whole hunt for years, without having the least idea that she perpetually breaks the unwritten law of the sport.

But there is one athletic amusement in which women undoubtedly excel, and which they will take great trouble to learn, simply because public opinion has condescended to approve it. In the ball-room there are always more graceful dancers amongst the women than the men, and there are generally two women who can dance well to one man who can. There is no courage required for this amusement, and it can be carried on in close rooms at unhealthy hours. Therefore, the hideous old crone called Fashion has set her seal of approval on it, and proclaims that, in as much as dancing can be made an unnatural pursuit, it shall receive her support. It is as difficult to dance in a tight dress as to skate; it is as tiring to dance as it is to play tennis; but all difficulties can be overcome when fashion leads the way, and the fair sex gratefully avail themselves of the permission to indulge in this mild form of play.

Other indoor games requiring no special strength, such as billiards, chess, or whist, are very seldom played well by women. A little thought, a little thoroughness are required in them all, and so they are passed over and put by as beyond the scope of women. The miserable habit of trifling seems to have eaten all energy out of most women's lives, and few girls have the strength to struggle against the weight of public opinion, which dooms them to dwell amongst the perpetually little. Half-hearted players and narrow-minded workers must women ever be unless they gather courage to break free from the petty routine imposed on their sex, and boldly determine to live their own lives. And be it remembered that it is perfectly easy to be strong-minded, without earning the common unpleasant meaning of that epithet. For with strength of mind comes largeness of mind, and that great toleration which disarms criticism. Nor is the woman who takes a keen discerning interest in sport the one at whom the reproachful term of "fast" is hurled. The true sportswoman never flirts, nor apes the bad habits of men; her mind is far too healthy for that, and her sense of the ridiculous too well developed.

The woman who works from necessity, seldom learns from her labour the love of play one would expect. The ordinary clerk when released from his office, has generally some scheme which involves exercise on hand. He is off through the silent streets on his bicycle to the still more silent country, where for a time he enjoys the fresh night breeze blowing over the open commons. Or he is a member of some volunteer corps, and there learns a joyous spirit of good fellowship which makes it a point of honour to camp out on a muddy heath, or march for hours through the rain, without a murmur. The lady clerk usually returns to her lonely lodgings to while away the weary hours in writing letters or mending her gloves and trimming her hats. If she lives near a vigorous rector, she may be drawn into a round of classes and church-meetings and services which will soon absorb all her spare time, and become her only form of recreation. Yet doctors are always recommending the tricycle to women, and makers have taken great trouble to produce machines suitable for their female customers.

In Health long ago the advantages of a thorough field-hospital scheme for the volunteers was shown. This would have embraced training in the most interesting work of military nursing for lady-volunteers. The scheme has not been taken up. The women who ride tricycles are slowly becoming fewer. It is only too evident on all sides that in work or play a new enthusiasm is wanted for women, and that their whole bringing up should be better adapted to teaching them the lesson of thoroughness, and developing their interest in all around.

GREAT EATERS.

By Dr. W. Curran.

(Concluded.)

But there are worse effects than this from excessive feeding, and among these may be mentioned an oppressed stomach, deranged digestion, a loaded tongue, vitiated secretions—a gorged liver, obesity and plethora—a sluggish brain and troubled sleep, and finally, an enhancement or aggravation of any or such rheumatic or gouty tendencies as may exist in the system. For, as old Burton said ("The Anatomy of Melancholy," p. 310):—"Nothing pesters the body and minde sooner than to be still fed, to eat and ingurgitate beyond all measure, as many do;" and he truly adds that "there is no meat whatsoever, though otherwise wholesome and good, but if unseasonably taken or immoderately used, more than the stomach can well beare, it will ingender crudite, and do much harme." A greater authority still (The Preacher) has said that "by surfeiting many perish;" and we know that this is so, not only from the example of that king of ours* who died from a surfeit of stewed lampreys, but also from many other sources.

In a paper on "Sudden Death," which I wrote some years since for an Indian periodical, I gave several illustrations of this kind, and there is no doubt but that the festivity of Christmas and Easter is marred in many a family in this country by contingencies of this kind. So are many weak hearts for ever stopped by heavy meals, and instances of men and women dying during or immediately after heavy meals are, comparatively speaking, common

* Henry I., and I have heard or read that Luther died soon after a big feed of this kind. He was, it is well known, a sot and a glutton for many years ere he died.

in our medical records. Thus, "Two successive princes of the house of Orleans were," according to Doran, "snatched away in the midst of their revelry, and paid dearly the penalty of intemperance and over-feeding." "Waiting to have a meal of pig's trotters, cost (according to Miss Elliot as above, Vol. I., p. 280) Louis XVI. his head," and Marryatt informs us ("A Residence in Jutland and the Danish Islands," Vol. I., p. 317) that "Queen Juliana of Denmark died of an indigestion consequent on eating a compote of apples, thick and glutinous, immersed in fresh and warm sheep's milk; a dish (he adds) she much affected." Similar instances of sudden death from indulgences of this kind are common. They must, indeed, be familiar to all.

If, coming now for a moment to our examples of "great eaters," we ask, Who were they? the answer will roughly be that all great men are or must be great eaters, and that each one can conjure up instances in point for himself. Thus, to go no farther afield, Dr. Johnson was, undoubtedly, a great eater. Everyone is familiar with Macaulay's description of his gastronomic powers. "He tore," we are told, "his dinner like a famished wolf, with the veins swelling on his forehead, and the perspiration running down his cheeks;" and when he drank wine, which was not often, he did so greedily and in large tumblers. We know that Pitt could empty a bottle of port at a draught. So could the famous pedestrian, Captain Barclay,† and I have been told that both Scott and O'Connell were great eaters. "Bodily strength is," says Walker ("Manly Exercises," p. 18) "a concomitant of good health, which is produced and supported by a regular supply of wholesome and nutritious food," and it is a physiological fact that the greater the tissue waste of the body, the greater also must be the means or media through which that waste is made good.

As further illustrations of this indulgence, or of this capacity, we may mention the cases of Charles V., Frederick the Great, and Napoleon Buonaparte. Of the first Motley says ("Rise of the Dutch Republic,") that "He breakfasted at five on a fowl seethed in milk, and dressed with sugar and spices. After this he went to sleep again. He dined at twelve, partaking always of twenty dishes. He supped twice; at first soon after vespers, and the second time at midnight or one o'clock, which meal was, perhaps, the most solid of the four. After meat he ate a great quantity of pastry and sweetmeats, and he irrigated every repast by vast draughts of beer and wine. His stomach, originally a wonderful one, succumbed after forty years of such labours," and no wonder. And Professor Ribot assures us ("Heredity," p. 99) that "Even at the monastery of San Juste he ate with avidity, before the eyes of his physician, frogs' legs and eel pies," and though his son, Philip, was not quite so gluttonous, his grandson, Don Carlos, was a worthy chip of the old block. "He eats so much, and with such ravenousness," writes the Imperial Ambassador, "as to surpass belief. Scarcely has he finished one meal than he is ready for another." We know from these writers, as well as from Prescott, Stirling, and others, that he once obliged (at the sword's point) a shoemaker, who had misfitted him, to eat the products of his own bungling.

Frederick the Great is another illustration of the rule; and there is no doubt that though he could exercise much restraint upon himself—as witness what Carlyle says of him—he was yet "a great eater." "Many anecdotes are current," says Carlyle ("The History of Frederick II." —1st Edition, Vol. VI., p. 191), "to this day about his pleasant homely ways and affabilities with the sentry people, and the rugged hospitalities they would show him at their watch-fires." "Good evening, children."—"The same to thee, Fritz." "What is it that you are cooking?" and "would try a spoonful of it"—but no more, we may be sure; and Tom had no access to his tent, or to the savoury messes that were prepared therein for him by his French *chef*. Other writers, or observers, are not so complimentary; and so "the King," wrote Mirabeau, who was in Berlin at the time, "eats every day of ten or twelve dishes at dinner, each very highly seasoned; besides, at breakfast or supper, bread and butter covered with salted tongue and pepper"; and there is no doubt that, *pace* the Sage of Chelsea, he loved good eating and drinking. It is generally understood that he hastened his death by refusing to conform in any way to proper rules of diet.

As to Napoleon, the evidence is not so strong. Indeed, Mdme. Durand expressly says, in her "Napoleon and Marie-Louise," p. 18, that though "the table was supplied with the daintiest dishes, he never touched them. His favourite fare was," she says, "grilled breast of mutton, or a roast fowl, with lentils or haricot beans. He was," she continues, "very particular about the quality of bread; and he drank none but the best wine, and very little of it. It has been stated that he drank eight or ten cups of coffee daily; but this is," she says, "a fable." . . . He only took—according to her—one small cup of coffee after his breakfast, and the same after his dinner; but this description of his gustatory powers is not borne out by Bourienne, Mdme. Campan, or others of his attendants. According to the former, he was very exacting, as well as very capricious, in respect of his food; and he expected some to be ready whenever he called for or wanted it. He would sometimes, indeed, kick over the tray or the table that did not contain what he desired; and the story of Leipzig is well known. Someone has attributed his defeat there to the effects of a shoulder of mutton stuffed with onions, with which he had just so gorged himself as to be incapable of clear-minded or vigorous action. Whether that was so or not I am now unable to say; but it is certain that he ate very fast—his State banquets only lasted thirty-five minutes or so—and I have seen Cancer of the Pylorus—the disease he died of—once ascribed to this evil habit.

As to what are called the "lower orders," there is no doubt that our hard-working miners, colliers, bargemen, &c., are, and must, *ex necessitate rei*, be great eaters. Not that continuous toil or unusual exertion necessarily begets a large appetite, for the reverse is often the case; and, as illustrative of this, Captain Osborne tells us ("McClure's North-West Passage," p. 113) that, "strange as it may appear, the whole consumption of food during nine days amongst eight men amounted but to eighteen pounds of pemmican, thirty-one pounds of biscuit, and two pounds of oatmeal—a consumption only to be accounted for by the crew being every night too exhausted . . . to care for anything but water." On the other hand, Hodge, who has no such distractions or ambitions before him, and who would, an' he could, "sleep in the eye of Phœbus till the baudy hand of the dial touched the prick of noon," has no such squeams or distastes. "Unquiet meals do not make ill-digestions" for him. We find, accordingly, that as a class, as well as an indi-

† Pierce Egan it is, I think, who says ("Book of Sports,") of this gentleman, who sat for a Scotch borough or county, that, on the assembling of Parliament, he used to walk all the way from his home in Scotland to London, and that after each journey he used to pour out a bottle of port into a basin, and drink it off at a draught on the spot.

vidual, he is fearfully constructed and equally gifted in this way; and as illustrations in point, I am induced to close this long paper with two stories that tell their own tale, and will fortunately call for little or no setting from me.

Describing a typical great eater in one of the clowns of his parish, Dr. Jessop says ("Arcady, p. 120) that "somewhere in the neighbourhood of Aylsham lived a certain Jerry Eke, whose appetite was said to be superhuman. . . . It came to pass that at a farmers' market-dinner the talk turned upon Mr. Eke's performances, when someone present protested that what had been narrated was impossible. "Impossible!" said another; "I'll bet you five pounds Jerry Eke will eat a calf at a sitting." The wager was taken and the preliminaries were arranged.

The calf was killed, the bones were cut out, the flesh was chopped into minute particles, and apportioned into seventeen enormous *pasties*, whose outer crust was a thin film of tempting batter. . . . Jerry was called in, and . . . was told he might fall to. He did so, and steadily gorged. He had made no difficulty of the first nine pasties, but when a tenth was brought in he seemed to flag. To the horror of his backers, he sighed and looked perplexed. It was but for a moment; he desired only to expostulate, "I say, Mas'r, I ain't got nothing to say agin them *poys;* I loik 'em amazin', but I'm a-thinkin' its abayut time as I should *begin upon that calf*," and all we need say of this narrative is, *Si non e vero, e ben trovato*—If it be not the truth, 'tis a very good substitute for it.*

Dwelling on the performances in this line of the natives whom he met in the interior of Australia, and especially on the voracity of a native boy who accompanied him, the late Mr. Eyre—Jamaica Eyre—says ("Journey Across the Western Interior of Australia," by Col. P. E. Warburton, pp. 44–5) that "he (the boy aforesaid) commenced by eating a pound and a half of horseflesh and a little bread; he then ate the entrails—paunch, liver, lights—tail, and two hind legs of the young kangaroo" (they had, I presume killed); "next followed a penguin that he had found dead upon the beach. Upon this he forced down the whole of the hide of the kangaroo, after singeing the hair off, and wound up this meal by swallowing the tough skin of the penguin." I have heard of other feats of this kind among savages as such, and as groups rather than individuals, that may favourably compare with it. With some, or, rather, such of these as will bear recapitulation, I hope to amuse or interest some at least of the readers of these pages on an early future occasion.

Sulphur Fumes for Consumption. — Consumptive patients are advised by a pupil of Liebig, in the *Apotheke Verein*, to live in rooms where one or two drachms of sulphur are melted on a hot stove. The first ten days brings increased cough and irritation, then these cease, and the patient improves rapidly. Persons with catarrh and in early stages of consumption apply to enter chemical factories, where large quantities of sulphur are evaporated daily, and are cured in a few weeks by the inhalations. Cholera and epidemic diseases are never found in such factories.

* Describing a somewhat similar case, Sir J. A. Picton says ("The Memorials of Liverpool," vol. ii. p. 44) that "it is said he was daily supplied with the rations of three men, yet was constantly 'asking for more.' The doctor, on one occasion, wishing to test his powers, invited a party to witness the exhibition, when Domery consumed, in their presence, fourteen pounds of raw meat, and two pounds of candles, which moderate repast he washed down with five bottles of porter."

Personal Health

"Be timely wise;
With health all taste of pleasure flies."—*Gay.*

HOW WE SING.

By Austin Flint, M.D.

FIRST PAPER.

It does not require more than a general idea of the anatomy of the vocal organs to enable one to comprehend the mechanism of the production of the voice. Teachers of singing should know how the singing voice is produced, and particularly how it passes from one register to another. To a clear understanding of this, a knowledge of the mechanism of the different vocal registers is indispensable. Many fine voices have been ruined by teachers endeavouring to train the vocal organs in accordance with crude and vicious theories or with no knowledge of the vocal mechanism. Pupils can work to more advantage if they have a definite idea of proper methods of vocal training. It adds immensely to the appreciation and enjoyment of vocal music to understand the processes by which musical effects are produced; and, of course, legitimate art is encouraged by public appreciation of the results of honest and intelligent work. These considerations have induced me to write this article in the hope of contributing something to the general knowledge of vocal mechanism.

The voice is produced by vibrations of little ligamentous bands situated at the top of the larynx. These bands have a direction from before backward, having their ends closely approximated in front and there fixed. They are attached behind to little movable cartilages, which may be brought together or somewhat separated at will, or which may be carried backward by muscular action, producing varied degrees of tension. These bands are the true vocal chords, and these alone are concerned in the production of the voice. Above these two chords are two bands (the so-called ventricular bands) a little more widely separated from each other, sometimes called the false vocal chords, as they take no part in vocal vibrations. The larynx, then, by virtue of the true vocal chords, is a musical instrument.

The actual muscular mechanism by which the vocal chords are stretched to different degrees of tension is not of so much importance as are the results of this action, as observed in the position and relations of the vocal chords and the characters of the vocal sounds produced. The most important of these muscles are concealed within the larynx. They are not increased in size to any considerable extent by exercise, owing to the limited capacity of the cavity of the larynx. They may be strained or enfeebled by over-use or injudicious training, and then the vocal organ seems to suffer irremediable damage. A strained or a badly worn voice never regains its original power, freshness or sweetness; but a voice carefully and properly trained, if not abused, will retain its qualities for many years.

During the ordinary movements of respiration the larynx is nearly passive, but during forced inspiration the vocal chords are separated at their posterior attachments, and the larynx is widely opened. When a vocal sound is to be produced, the vocal chords are put upon the stretch, and the larynx is closed, to be partly opened by the expiratory effort. The vocal chords are thus prepared in advance for the note that is to be emitted, and are thrown into vibration by a current of air forced through the larynx by the muscles of expiration. The chords

vibrate when the air is forced out of the windpipe, and proper regulation of the breath is of great importance in singing.

As in all musical instruments, the actual vibrations must be reinforced by resonating cavities. The air in the larynx itself, the windpipe, pharynx, mouth, and nasal cavities reinforces the vibrations of the vocal chords, and modifies the power and quality of the human voice. The most important modifications of vocal sounds are produced by resonance of air in the pharynx, mouth, and nasal cavities; and this resonance is indispensable to the production of the natural human voice. A muscular curtain (veil of the palate) hangs between the cavity of the mouth and that of the nose. This may pass backward so as to close the openings into the nasal cavities, and the tongue may move backward so as to diminish the capacity of the cavity of the pharynx. As notes made by vibrations of the vocal chords become higher and higher in the musical scale, the tongue is drawn back, its point is curved downward, its base projects upward and backward, and the cavity of the pharynx is diminished in size. At the same time the muscular curtain (veil of the palate) is constricted and moved backward, until, in the highest notes of the chest register in the male and the upper medium in the female, the openings into the nasal cavities are closed, and the resonance is mainly in the bucco-pharyngeal cavity. When, however, a singer passes into what is sometimes called the head voice (falsetto), the veil of the palate is drawn forward instead of backward, and the resonance takes place chiefly in the naso-pharyngeal cavity. In moderately low chest notes all the cavities resound. The larynx itself moves upward for high notes and downward for low notes, and there is a certain amount of resonance of air in the windpipe.

The movements of the tongue, mouth, veil of the palate, and larynx are very important in vocal efforts. These are properly taught by all good teachers of singing who have learned their mechanism by experience. The uvula, hanging from the middle of the veil of the palate, is important in the closure of the nasal openings. The little leaf-like cartilage which stands erect in front of the larynx may be moved backward, mainly by pressure from the base of tongue, and is useful in modifying the form of the cavity just above the larynx. Faulty action of all of these parts may be easily remedied; it is not likely permanently to injure the voice like faulty management of the muscles which act upon the vocal chords.

The little movable cartilages to which the posterior ends of the vocal chords are attached are called the arytenoid cartilages. These will be mentioned frequently in connection with the mechanism of the different vocal registers.

The laryngoscope is an instrument by which the movements of the vocal chords may be observed and studied. It consists simply of an arrangement of mirrors under proper illumination, by which the vocal chords are brought into view. Manuel Garcia, the celebrated London teacher of singing, was the first to use this instrument in studying the mechanism of vocal movements in his own person. His observations were published in the "Proceedings of the Royal Society," in 1856. Since then similar observations have been made by Mrs. Seiler and by many scientific men. The observations, however, of Garcia and Mrs. Seiler, both professional singers and eminent teachers of singing, are peculiarly valuable.

INHALATIONS IN LUNG TROUBLES.

When there is disease of the skin, the eyes, or ears, it is usual to expect that the utmost good possible will come from external applications, that is from local treatment. The case is precisely the same when the nostrils, throat, windpipe, bronchi, &c., are affected, and local treatment is becoming more and more popular with laryngologists and those who make a speciality of diseases of the lungs. The case of the Crown Prince of Germany is one in point. Local or topical treatment has been considered the main thing. It is a strange thing that inhalations have played so small a part in the past in the treatment of pulmonary troubles. Now every one recognizes their value.

Nothing in the whole range of medical treatment could be more remarkable than to see an infant suffocating with croup relieved in an instant by letting it breathe a steam charged with lime-water. Many a life has been saved in diphtheria and croup with steam inhalations. In coughs and colds, which include a variety of troubles, steam inhalations, if used when the affection first appears, are of very great service indeed. On the Continent they are widely used, and recently an establishment has been started at Farnborough, where pine inhalations, baths, &c., are given with the best results. The preparation of pine used at Farnborough is that known as Pinol, which is an essence of a choice species known as the Pumilio, and growing on the snowy heights of the Alps. To use the Pinol in inhalation, pour thirty drops of it into a small basin of boiling water, surround it with a towel, and inhale the steam. The drug may also be used in any of the steam atomizers.

A remedy of great value in cases of asthma is Pure Terebene (Burroughs). A well-known Major-General told us the other day that the only thing that made his life bearable at all is inhaling steam medicated with Terebene. Dr. Murrel gave this drug in 120 cases of winter cough with splendid results in every one. It may also be used in an ordinary spray atomizer—not steam—and will afford good results. In the chronic coughs of children, who are troubled with flatulence and an indifferent appetite, Pure Terebene (Burroughs) in four or five drop doses on a lump of sugar, thrice daily, will frequently effect a cure. Men troubled with catarrh and cough will do well to rub the Terebene on their moustache.

Another agent of value is Eucalyptia, but care should be taken not to buy the ordinary products of Eucalyptus in the market, as they are worthless, being made from an inferior growth. In purulent catarrh of the nose, or indeed any part of the entire respiratory tract, Eucalyptia may be used with advantage. Even in consumption it is serviceable.

Last of all, we may mention as of service in irritability and inflammation of the throat and lungs, the preparations of Witch-hazel; these are soothing to the mucous membranes, when diluted a little, and in inhalations are always beneficial in allaying inflammation and relieving pain. The preparation which is to be preferred is Hazeline. It may be taken internally, and is an excellent gargle in all inflamed conditions of the throat. It may be used with safety in acute stages where other drugs would be contraindicated. It is also of service in other than pulmonary troubles.

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"The child is father of the man."—*Wordsworth.*
"In bringing up a child, think of its old age."—*Joubert.*

CONSUMPTION AND CORSETS.

Dr. Thomas J. Mays, of Philadelphia, has contributed to the *Medical News* a very valuable paper on female dress as a determining factor in pulmonary consumption. He says that it is currently believed that more females than males fall victims to this disease. Both Laennec and Louis hold this view, at least, so far as France was concerned; and Ancell, one of the most prolific and exhaustive writers on the natural history of tuberculosis, concurs entirely in this opinion. Sir James Clark's statistics, which were collected from thirteen different localities in Europe and America, showed, in the aggregate, more deaths from phthisis among females than among males. Dr. A. James, in an interesting article on sex in connection with phthisis, lately published in the *Edinburgh Medical Journal* (March, 1886), arrives at the same conclusion. It must be admitted, too, that, if the question of sex in relation to pulmonary consumption be viewed from an *à priori* standpoint, there are sufficient reasons for believing that the female is more prone to the disease than the male, because she is generally considered to be the weaker, and because she is more exposed to the causes which are known to give rise to it. She is confined within doors, where she naturally spends the greater portion of her life, and is, of course, subjected to the influences of impure air and bad ventilation. She leads a sedentary life, is deprived of sunlight, exercise, and undergoes the enervating processes of gestation and lactation, while, on the other hand, the male is, as a general rule, less or not at all exposed to most of such unhealthful conditions; and it is only when he is subjected to some of them, as, for instance, to impure air, sedentary occupations, &c., that he becomes notoriously liable to pulmonary consumption.

Dr. Mays has collected statistics for many of the American cities, and also for other countries, and finds that, so far as they go, they establish the fact beyond a doubt, that in civilized life the male sex is more liable to pulmonary consumption than the female. He gives the following statistics:—

Statistics of Sex in Pulmonary Consumption.

Locality.	Male.	Female.	Remarks.
Chicago*	1 : 635	1 : 793	Average for 6 years, 1869, 1881-85.
New York City, 1870 ...	1 : 233	1 : 318	
Massachusetts, 1880	2·86%	3·28%	Per 1,000 males and females respectively.
Boston, 1883-84	1 : 248	1 : 251	
Rhode Island, 1884 and 1885	1 : 380	1 : 351	
Philadelphia, 1884 and 1885	1 : 303	1 : 310	
Nashville, 1877 and 1878 ...	1 : 263	1 : 286	Both white and coloured males and females.
" " " "	1 : 443	1 : 422	White males and females only.
" " " "	1 : 142	1 : 190	Coloured males and females only.
San Francisco, 1875-80 ...	1 : 313	1 : 418	Average of 5 years.
Sacramento	1 : 340	1 : 435	Average of years 1874 and 1879.
Cincinnati, 1883	1 : 325	1 : 423	
Baltimore, 1885	1 : 342	1 : 381	
Scotland, 1871-80	1 : 423	1 : 387	
England, 1872-81	1 : 467	1 : 502	
London, 1843-46, decedents from consumption... ...	53%	47%	See "Ancell," p. 396.

* These figures indicate a lower death-rate for Chicago than actually exists, because we are not able to obtain the male and female population of this city separately: hence our estimate is based on the male and female population of Cook County, in which it is located, and for comparative purposes answers very well.

Locality.	Male.	Female.	Remarks.
Basel and Zurich, 1877-84, decedents from consumption	54·7%	45·3%	See Dr. Schnyder in *Correspondenz Blatt für Schweizer Aerzte*, Nos. 10, 11, 12, 1886.
Cantons of Wallis, Waadt, Freiburg, Lucerne, from 1877 to 1884, decedents from consumption	52·5%	47·5%	*Ibid.*
Cities of Prussia, 1875-79 ...	1 : 236	1 : 318	
County districts of Prussia, 1875-79	1 : 314	1 : 369	
Leading cities of New Jersey, 1884, deaths from consumption in nine	94	84	

Hospital & Private Practice.	Male.	Female.	Remarks.
Dr. Flint, Sr., 669 cases ...	505	164	See "Flint on Phthisis," p. 50.
Dr. Williams, 1,000 cases ...	625	375	See "Williams on Consumption."
First Brompton Hospital report, 1848	61	39	
Dr. Pollock's practice ...	60·75%	39·25%	
254 patients of Dr. Schnyder's, coming from cities	165	89	See Dr. Schnyder, *Cor. Blatt für Schweizer Aerzte*, Nos. 10, 11, and 12, 1886.
914 patients of Dr. Schnyder's, from the country ...	537	377	*Ibid.*
500 of Dr. Brehmer's cases...	319	181	See Brehmer, "Die Aetiologie der chronischen Lungenschwindsucht."
88 cases reported by Dr. Churchill of Paris	59	29	
67 cases reported by Dr. Thorowgood...	34	33	
Cases in Royal Infirmary, Edinburgh, 1833, 1834, and 1835	365	217	See Reynold's "System of Medicine," vol. iii., p. 546.
Consumptives in three Parisian hospitals, proportioned to the whole number of inmates	1 : 35	1 : 21	See "Ancell," p. 397.
550 deaths in St. George's Hospital in ten years ...	388	162	*Ibid*, p. 763.
Chest Department of Phila. Polyclinic since Jan., 1885	113	88	
Brompton Hospital for Consumption, from 1842 to 1848	2,682	1,597	

Having seen, then, that in the aggregate more civilized males than females die of pulmonary consumption; that the costal respiration of the civilized female is developed through the constricting influence of dress around the abdomen; that the lungs possess an excessive breathing surface which by sedentary occupations, &c., can be, and is frequently, reduced in a great degree; that the baneful results of such a reduction, consisting of hyperæmia, &c., fall with the greatest force on the apex of the lung; that all those who suffer from consumption also show a decided tendency to immobility of the upper part of the chest,—are we not, therefore, justified in believing that a defective costal respiration and the beginning of pulmonary consumption stand in relation to each other as cause and effect? And, going one step further, is it not clear that the civilized female owes her greater immunity from this disease in a great measure to the fact that she possesses a more highly developed costal expansion? If these relations exist, it is quite obvious that her manner of dress is a direct factor in bringing about this result. She has, by force of necessity, been led to clothe herself after a method which demands a restriction of the abdominal and diaphragmatic movements, and which cultivates a greater development of the costal portion of the breathing-organs, and thereby she unconsciously protects herself to a greater degree against this disease while the male, on the other hand, dresses himself after a fashion which secures perfect freedom of motion to the diaphragm and to the abdominal muscles, but which also attracts and tends to confine the respiratory function to

the lower portion of the chest. Moreover, it must not be forgotten that the same fashion also demands that his clothing should be suspended from the shoulders, which of itself restricts the movements of the upper portion of the chest; making it evident, therefore, that his clothing renders him, both indirectly and directly, more liable to the disease under consideration. To this conclusion, and to no other, do our facts and reasoning lead.

The evidence which has thus far been gathered from statistical, experimental, and inductive grounds, all tends to demonstrate that impairment of the respiratory movements of the upper portion of the lungs is one of the principal direct causes of pulmonary consumption. Indeed, all the proof goes to show that in many conditions of life, especially in many of those to which the male sex is exposed, the apices of the lungs become superfluous parts of the body, and on this account possess a strong tendency to that premature waste which is characteristic of all organs when they fall into a state of inactivity. The practical solution of the problem of the prevention of pulmonary consumption, as well as of the cure in many cases, therefore consists in the adoption of measures which tend to increase the chest capacity, and which maintain the general and local health of the individual.

The treatment, so far as prevention is concerned, resolves itself into a proper exercise of the chest muscles, into systematic breathing, and into the rational employment of compressed and rarefied air. First, then, as to a proper training of the chest muscles. This is accomplished by raising the shoulders, and by swinging the arms backward, forward, and upward, either with or without dumb-bells, or by exercising on parallel bars, care being taken that a full inspiration is taken every time that the arms are thrown backward and upward, or the body forward, and that a complete expiration occurs when the arms are brought together in front, or when the body is thrown backward. These movements should be performed regularly, and from sixteen to twenty times in a minute. There are a number of appliances in the market which are worked by means of ropes, weights, and pulleys, and which are admirably adapted for the enhancement of the above-described movements. They are very simple, and can be attached to the wall of the nursery or of the sleeping-room, and not only afford a healthful exercise, but a pleasant amusement for both children and adults.

REPLANTATION OF TEETH.

On the 3rd of January, 1886, a girl, æt. 18, called at the Ecole Dentaire, of Paris, complaining about her first right upper bicuspid tooth, which was very badly decayed and besides affected with chronic periostitis. This tooth had been previously filled in May, 1885, but the filling had proved unsuccessful; it had come out. The root canals were open, and dentine was exposed to the destructive action of the saliva, and therefore softened. The tooth had been in this condition for six months. In spite of all the treatment which was subsequently applied, the tooth still ached after a month had elapsed.

As the girl insisted upon having the tooth preserved, replantation was suggested to her, and she consented to undergo the operation. The tooth was extracted; the roots, two in number, were at the extremities entirely deprived of the periosteum and even partly necrosed. The palatine root was perfectly straight; the labial root, however, had a curve at its apex. As soon as the tooth had been extracted, the socket, as well as the tooth, were carefully cleansed with alcohol and carbolized water. The cavity and canals of the tooth were properly prepared and filled with Poulson's cement.

The diseased parts of the roots were removed, and after the tooth and alveolar cavity had been thoroughly disinfected, the tooth was replaced. The operation required twenty minutes.

In order to retain the tooth in its proper position, a new method was followed, which has been recommended by Dr. Herbst, of Bremen. It consists in the application of the rubber-dam. A small piece of rubber-dam, about 5 cm. square, was taken and two holes punched into it, leaving enough space between them to stretch it over the replanted tooth, fastened as before on the canine, and the excess of dam trimmed off. In this way the dam is held in position by two sound teeth; it has two fixed points, which hold the replanted tooth in the socket by a constant pressure.

A week later the patient came back to the clinic, and, upon examining the mouth, it was found that the gums were in a perfectly healthy condition, and although the tooth was a little loose yet, it still was firm enough to allow the rubber-dam to be taken off. On pressing on the grinding surface, however, a little pain was perceived. Another week afterwards the tooth was entirely non-sensitive, the articulation normal, only mastication was not perfect. The patient was advised not to chew on the right side, to prevent inflammation.

Three weeks after the operation there was no perceptible pain caused by pressing on the grinding surface. The tooth was firm, and the gums did not show any signs of inflammation.

In December, says the writer, we had the satisfaction of being able to state that the replanted tooth is just as firm as any tooth in the patient's mouth.

A Remedy for Neuralgia.—The following mixture is advocated:—Eau de Cologne, ether, and chloroform, of each, three drachms. Wet a handkerchief, and afterwards pour some of this mixture upon it. Placed upon the affected part it gives relief. In nervous headaches this will be also found serviceable.

Is Consumption Contagious?—After the study of nearly twelve thousand cases, Dr. Hermann Brehmer, an able German physician, rejects the theory of the contagiousness of pulmonary consumption. He finds the disease to be due to deficient nutrition of the lung, which may result from many causes. He believes that the operation of all the causes may produce such changes that it may be possible, years in advance, to predict with great probability which members of a family will be afflicted with pulmonary consumption, and which will remain healthy.

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And taught a language to its lisping tongue."
—*Charles Mackay.*

GENIUS AND MENTAL DISEASE.

By William G. Stevenson, M.D.

FIFTH AND CONCLUDING PAPER.

In the history of political literature the name of Edmund Burke stands among the first, and is representative not only of that illuminating power which belongs to lofty minds, but of the genius which comes "as the consummation of the faculty of taking pains." Year after year his voice sounded in behalf of the "sacredness of law, the freedom of nations, the justice of rulers," and the imagery of his thought—imposing in its majesty—"carries us into regions of enduring wisdom." For nearly threescore years his mind retained the dignity and calm of lofty greatness, and seemed to totter from its balance only when he breathed the torrid heat of fury which was sweeping over France and gathering wrath against the horrid atrocities of "'89." He had before him the vision of Marie Antoinette, "glittering like the morning star, full of life and splendour and joy," and felt that, through unbelief and passion, the props of stable government and morals were being broken and destroyed. The "divine right of kings" was yet an article of common faith, and he saw their sorrow, but heard not the wail of anguish which ascended from the oppressed and starving people. Rage against the lawless Parisian mob filled him, and in his wrath he spoke as if envenomed hate had made him mad; and he was so adjudged, but only by those who differed from him. The inspiration of his genius gave him the tongue of truth, and the penalty was an assault upon his sanity.

Then came the supreme sorrow of his life, the death of his son, and in his grief he wrote: "The storm has gone over me, and I lie like one of those old oaks which the late hurricane has scattered about me; I am stripped of my honours; I am torn up by the roots, and lie prostrate on the earth. I am alone, I have none to meet my enemies in the gate; . . . I live in an inverted order. They who ought to have succeeded me have gone before me. They who should have been to me as posterity are in the place of ancestors."

Because of the outward expressions of grief which were at times his, as when his son's favourite horse came to him and put its head upon his bosom, which caused Burke to cry aloud in his sorrow—because of such manifestations of grief, it is said Burke was mad. Edward Everett has well said: "If I were called upon to designate the event or the period in Burke's life that would best sustain a charge of insanity, it would not be when, in a rush of the holiest and purest feeling that ever stirred the human heart, he wept aloud on the neck of his dead son's favourite horse." As proof that his intellect was not disordered, his "Letters on a Regicide Peace," written in 1796, a year before his death, bear ample evidence, and are regarded, says John Morley, "in some respects the most splendid of all his compositions. . . . We hardly know where else to look, either in Burke's own writings or elsewhere, for such an exhibition of the rhetorical resources of our language."

That Burke had at times eccentricities and fleeting aberrations may be true, but to call such a man insane, or to speak of him as illustrative of the kinship between genius and madness, is to make sport of facts and mockery of human thought.

Notwithstanding the many names I thus take from the roll-call of madness, there are, nevertheless, many gifted minds that have not been absolved from this sad heritage, or been able to bear with calm serenity the misfortunes and burdens of a weary life. Such was Schumann, the eminent composer of music; and Blake, to whom the realities of the world were but dissolving forms of his own consciousness; and Clare, who, when his melancholy was deepened by the neglect of family and friends, wrote so plaintively of his own gloom and loneliness. Cowper was timid and morbid, and agonized under religious melancholy and suicidal impulse. The insane temperament was also definitely marked in Comte, the oracle of the "Positive Philosophy"; in Tasso, whose melancholy fate gave to Goethe the opportunity to picture a psychological drama, wherein character is revealed under the glow of "poetic furor," and also, at times, oppressed by morbid fears and delusive visions; in Swedenborg, whose prolific mind teemed with fancies and speculations, contradictions and absurdities, which can only be explained on the theory of a mind diseased; and in Charles Lamb, whose "diluted insanity" cast an enduring shadow over his life.

The facts, as I view them, make me dissent from the theory that a diseased brain is the physical substratum of genius, or that the possession of such exalted mental endowments "carries with it special liabilities to the action of the strong disintegrating forces which environ us." "A large genius," says Dr. Maudsley, "is plainly not in the least akin to madness; but between these widely separated conditions a series of connections is made by persons who stand out from the throng of men by the possession of special talents in particular lines of development; and it is they who, displaying a mixture of madness and genius at the same time, have given rise to the opinion that great wit is allied to madness."

To the extent that a nervous organization makes possible excessive emotional life, or vagaries in thought or action, to this same extent is true genius qualified and limited; for, without calm reason and volitional control, creative imagination is distorted into an irresponsible fancy.

The degree of perfection of any mechanism, whether it be a watch, an engine, a harp, or telescope, or the human brain, is the measure of the quality of the work which can be produced therefrom; and, conversely, the quality of the work is an index of the structural character of the instrument employed.

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"Isabella Thwaites."

The better the finish and adjustment of a mechanism in its various parts, the less will be the friction, and the "wear and tear" from constant use; and, although the very delicacy of its adjustment may give a greater susceptibility to disturbing causes, the causes themselves are not inherent, but incidental. These facts apply with equal force to that most perfect and complex of all known mechanisms—the human brain, which is energized with the subtile principle of life, and evolves thought, feeling, and will, which, in their noblest and most exalted expressions, are indicative not of disease, but of mental health.

Nervous and mental diseases are too common among all classes of people and orders of intelligence to permit us to think that genius is the special object of their dominion. This idea is rejected, not because it is repugnant, but because it is not sustained by facts when measured by the standard of the highest art, or loftiest thought, or greatest work.

Look at the scores of eminent names within a hundred years, and show therefrom, if possible, the evidence which justifies the statement that intellectual greatness is "beset with mental and moral infirmity," or that genius is merely an expression of a morbid mind, akin to madness.

Imagination gives to genius—which is the intellectual scout of progress, and the Titan force which organizes the factors of civilization—a realm wherein the soul throbs and burns with the fervour which comes only when a new truth cleaves the darkness and illumines a pathway hitherto unrevealed; and where the clash and turmoil of cerebral action excite the highest pleasure, though at the same time they often weary and exhaust.

In this century, when the fierce blaze of modern thought has filled the world with unparalleled glory, and the inventive genius of man has made the earth a vast workshop of industrial arts, wherein the human brain is "master-workman" over all, how rare is it that the brain-worker feels the oppression of a "mind-diseased," except when, like the wage-worker, he frets and worries under the burdens of a weary life, and falls by the wayside because the struggle for existence—keen, sharp, and relentless — has taken from him the inspiration, the strength of hope.

Mental stagnation, personal or domestic sorrow, social enthrallment, religious excitement, crushed hopes, and poverty, are the chief moral causes which contribute so largely to the mental infirmities of man.

In conclusion, I hesitate not to say that the most illustrious names of ancient or modern times—in all departments of human thought or activity—have been, with but few exceptions, loyal to the sovereign rule of sane reason; and the sweep of their imagination has been in curves which rounded in the bright empyrean of truth and beauty.

A man met his doctor on the street and complained of rheumatic pains, for which the doctor recommended him to take a pinch of "nitrate of potash" two or three times a day. Shortly afterwards he met the doctor again, and in reply to the question regarding his health, remarked, "Oh, I'm getting well, doctor; but 'tain't your medicine. I tried that for some time, till a neighbour told me something he took for his rheumatism—a very simple remedy. I tried it, and it does me a great deal of good." "What is it?" said the doctor. "Oh, it's simple; I'm afraid you'll laugh at me if I tell you." The doctor promised to control his risibles, and the patient, after much urging, informed him that it was "saltpetre." The doctor's smile was longer than the street.

Jottings from the Journals

"Th' ingredients of health and long life are
Great temperance, open air,
Easy labour, little care."—*Sir Philip Sydney.*

Shakespeare and Medicine.—Students of the antiquities of medicine will find some interesting observations on this subject in a paper by Mr. L. M. Griffiths, of Bristol, entitled "Shakespeare and the Medical Sciences." The period in which the national mind in this country was emerging from the dim light of mediæval times into the clear and increasing brightness of the revival of learning was naturally not at first remarkable for progress in scientific discovery, unless we take into account the achievements of navigation. The gain at that time and for long afterwards was chiefly on the side of letters. Medicine and surgery, standing almost alone as representing science, maintained an uncertain struggle for existence and reputation. The position of their votaries appears to our modern ideas hardly credible. Debarred from the means of acquiring by dissection a knowledge of anatomy, and deriving their scanty knowledge of treatment from the teaching of a hazy empiricism mixed with superstition, it was hardly to be expected that they should command public esteem by the success of their curative efforts. Our great poet himself does not seem to have recognized in their attempts any promise of future greatness. Notwithstanding that medical allusions are pretty freely scattered throughout his works, comparatively few of these refer either to the practitioner or his art in terms at all complimentary; while, on the other hand, references of an opposite character are not uncommon. The descriptions of Pinch, "the hungry, lean-faced villain," and of Dr. Caius, the boastful charlatan, in the "Merry Wives of Windsor," do not flatter irregular practitioners. Apparently the *bonâ-fide* physician does not stand in more honourable esteem, for Timon says to the banditti—

"Trust not to the physician;
His antidotes are poison, and he slays
More than you rob."

Lady Macbeth's doctor of physic, however, is presented in a somewhat more favourable light. He is careful and candid, and, while recognizing the case of his patient as needing more the divine than the physician, shrewdly advises those who wait upon the unhappy maniac to

"Remove from her the means of all annoyance,
And still keep eyes upon her."

Have we progressed greatly beyond this point in our present treatment of lunacy? A significant feature of these Shakespearian records of medicine is the frequent mention made in them of the examination of urine. It seems to have been a principal part of the practitioner's office to inspect the renal excretion of his patients, and, with little or no further information, to decide upon his malady—an obviously fallacious proceeding. As we look back upon the groping and unskilful movements of the medical mind in those days, we cannot but feel a sympathetic and respectful pity. It is not unnatural that the great poet should show pity but little mingled with respect. We may, however, confidently state that had he been able to forecast the future of medical science, he would not have been slow to appreciate the greatness of its aims and the deserving energy of those who have promoted them.—*Lancet.*

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An Interesting Letter from a Veteran.

AS this is Jubilee year, it tends to make one look back and think of the flight of time, and in this way I am reminded that I am one of the veterans in the sale of your valuable and successful medicine. I have sold it from the very first, and have sent it into every county in England and many parts of Scotland. Well do I remember the first circular you sent out some nine or ten years ago. You had come to England from America to introduce Mother Seigel's Curative Syrup, and I was struck by a paragraph in which you used these words: "Being a stranger in a strange land, I do not wish the people to feel that I want to take the least advantage of them. I feel that I have a remedy that will cure disease, and I have so much confidence in it that I authorise my agents to refund the money if people should say they have not been benefited by its use." I felt at once that you would never say that unless the medicine had merit, and I applied for the agency, a step I now look back upon with pride and satisfaction.

Ever since that time I have found it by far the best remedy for Indigestion and Dyspepsia I ever met with, and I have sold thousands of bottles. It has never failed in any case where there were any of the following symptoms: Nervous or sick headache, sourness of the stomach, rising of the food after eating, a sense of fulness and heaviness, bad breath, slime and mucus on the gums and teeth, constipation, and yellowness of the eyes and skin, dull and sleepy sensations, ringing in the ears, heartburn, loss of appetite, and, in short, wherever there are signs that the system is clogged, and the blood is out of order. Upon repeated inquiries covering a great variety of ailments, my customers have always answered, "I am better," or "I am perfectly well."

What I have seldom or never seen before in the case of any medicine is that people tell each other of its virtues, and those who have been cured say to the suffering: "Go and get Mother Seigel's Curative Syrup, it will make you well." Out of the hundreds of cures I will name one or two that happen to come into my mind.

Two old gentlemen, whose names they would not like me to give you, had been martyrs to Indigestion and Dyspepsia for many years. They had tried all kinds of medicine without relief. One of them was so bad he could not bear a glass of ale. Both were advised to use the Syrup, and both recovered, and were as hale and hearty as men in the prime of life.

A remarkable case is that of a house painter named Jeffries, who lives at Penshurst, in Kent. His business obliged him to expose himself a great deal to wind and weather, and he was seized with rheumatism, and his joints soon swelled up with dropsy and were very stiff and painful. Nothing that the doctors could do seemed to reach the seat of the trouble. It so crippled him that he could hardly do any work, and for the whole of the winter of 1878 and '79, he had to give up and take to his bed. He had been afflicted in this sorry way for three years, and was getting worn out and discouraged. Besides, he had spent over £13 for what he called "doctors' stuff" without the least benefit. In the spring, he heard of what Mother Seigel's Curative Syrup had done for others and bought a 2s. 6d. bottle of me. In a few days he sent me word he was much better—before he had finished the bottle. He then sent for a 4s. 6d. bottle, and as I was going that way I carried it down to him myself. On getting to his house what was my astonishment and surprise to find him out in his garden weeding an onion bed. I could hardly believe my own eyes, and said:

"You ought not to be out here, man, it may be the death of you, after being laid up all winter with rheumatism and dropsy."

His reply was: "There is no danger. The weather is fine, and Mother Seigel's Syrup has done for me in a few days what the doctors could not do in three years. I think I shall get well now."

He kept on with the Syrup, and in three weeks he was at work again, and has had no return of the trouble for now nearly ten years. Any medicine that can do this should be known all over the world.

Yours faithfully,

(Signed) Rupert Graham,
Of Graham & Son.

Holloway House, Sunbury, Middlesex,
June 25th, 1887.

The above wonderful cure of Rheumatism was the result of the remarkable power of Mother Seigel's Syrup to cleanse the blood of the poisonous humours that arise from Indigestion and Dyspepsia.

Mother Seigel's Curative Syrup is for sale by all chemists and medicine vendors, and by the proprietors, A. J. White, Limited, 35, Farringdon Road, London, E.C. Price 2/6 per bottle.

Our Bookshelf

"Reading maketh a full man."—*Bacon.*

INFANT LIFE.

Infant Health; the Physiology and Hygiene of Early Life. By H. Percy Dunn, F.R.C.S., &c. (London: Kegan Paul, Trench & Co., 1, Paternoster-square, E.C. 1888.)

This volume differs materially from most other works dealing with the care of infancy and childhood. Such volumes, as a rule, treat of the diseases to which infancy is liable, and of appropriate means of cure. Mr. Dunn, on the contrary, takes as the basis of his remarks the idea that a knowledge of the natural development of infant life on its way towards youth is the surest foundation for the correct understanding of the early maladies of man, and for the regulation, in a normal sense, of infant-existence. Just as a knowledge of the natural functions of the adult body—or in other words an acquaintance with physiology—forms the basis of rational medicine, so Mr. Dunn rightly conceives that the story of the natural course of early life should place a useful meed of information within the hands of parents and guardians. Those who think to receive from the present volume a store of medical details will be disappointed, equally with those readers who imagine they will be qualified to treat the diseases of infancy after mastering its contents. But more sensible parents will peruse our author's remarks with benefit, seeing that they will recognize in his plainly-written details the means for so regulating the course of infancy that disease may be averted, and life's budding powers directed in the channels along which the natural development of the body should speed.

In the course of a well-arranged series of chapters, Mr. Dunn contrives to impart a large amount of knowledge regarding childhood and its growth. After a suitable introductory chapter, we are led towards the study of the physiology of heart and lungs. Here the author describes lucidly the nature of the work performed by these organs. The circulation, involving that through the lungs and that through the body, is duly noted, as also is the work of the lungs in getting rid of waste matters, and in supplying the blood with the oxygen needed for purifying that fluid. The references to the special needs and requirements of children in so far as heart and lungs are concerned, are copious enough in this early chapter of the book. Mr. Dunn describes the infantile type of breathing—rapid and shallow, and rarely, if ever, resulting in full inflation of the lungs. He also notes the signs of lung and heart-ailments as compared with the course of the normal breathing and circulation, and early in the book strikes the key-note of accurate knowledge of unusual states in children as founded upon the information dispensed regarding the natural and usual course of life in the young.

The history of the digestive organs naturally forms an important chapter in such a work as that before us. A full sketch of the digestive process in the adult is first of all duly given. Then, passing to the state of matters in the infant, a marked contrast is shown. For instance, in the adult, the functions of the stomach are relatively slight as compared with the digestive work performed in the intestine. In the infant, as our author remarks, there is a prominence given to stomach-digestion. In the adult, the duties of the *pancreas* or "sweetbread" are paramount, seeing that the pancreatic juice digests every variety of nutriment. In the infant, on the contrary, the sweetbread's functions are held in abeyance. The natural food is milk, and this fluid, while presenting a field for the operations of the stomach, gives relatively little work for the pancreas to perform. From milk—a combination of nitrogenous with non-nitrogenous principles—the child stores up the necessary fat, and obtains, likewise, the sugar, nitrogenous matter (casein), and minerals which are required for the growth of all its tissues.

The author, as might have been expected, is careful to insist on the physiological and social enormity practised by those mothers who give starchy foods in any form to young infants. Milk contains no starch, and therefore, arguing on the ground of acquiescence in nature's teachings, it is clear that a starchy diet in young infants is a dietetic error of the gravest kind. The saliva of the young child's mouth cannot convert the starch into grape sugar; a process proper to the adult, and to the child after it attains the age of eight or nine months. Hence starchy foods, forming, in this way, the chief error in improper feeding, load the infant's digestive system with indigestible material, and are a notorious cause of the high mortality from infantile diarrhœa which massacres the innocents under one year old in the warm months of each year. In the succeeding chapter on "Food and Feeding," our author extends and amplifies the information he gives in his third chapter on digestion. A mother reading these sections of the work before us, should rise up from its perusal fortified in no small degree for the task of securing physiological safety for her children, in so far as the selection of foods is concerned.

Succeeding chapters on "Secretion and Excretion" and on "The Temperature of the Body" deal with topics which possess a close relation to the phenomena both of health and of disease. Mr. Dunn gives a clear account of the nature of bodily heat and of its sources and maintenance. He is an enemy of that absurd, baneful, and foolish idea which consists in "hardening" children, by exposing them to the vicissitudes of climate under the theoretical idea of enabling them to withstand the vigours of cold. There is another foolish idea which may be placed in parallel lines with that of "hardening" children—namely, the notion that by exposing children to infection from what is believed to be a mild attack of any fever, they will thereby acquire an easy immunity from any future invasion. Both ideas are utterly erroneous. The child "hardened" by undue exposure succumbs as often as not to bronchitis, or pleurisy, or lung-inflammation: his neighbour "smitten" with scarlet fever or measles of a so-called mild type, develops a virulent attack of the ailment and dies. Both practices are thoroughly at variance with every rule of health-science. There is far too much disease in this world to risk even the least chance of further acquirement thereof, on any account whatever. The book before us will do good, if only through its teaching lessons of the kind we have just specified.

The section on "The Nervous System" will bear careful perusal by all interested in the welfare of children. It is carefully written, and as it deals with a type of more than ordinary interest, in connection both with health and education, we may recommend its study to every parent. Equally interesting from a hygienic point of view is the chapter on the development of the teeth. Our author might have made it clear that teeth are not bones, but belong to the skin-structures of the body, and his recital (p. 101) of the case of the lioness with cleft

palate in her cubs is an *apropos* illustration of the necessity not for nourishing teeth, so much as for the due nutrition of bone.

"Bone and Muscle" and "The Special Senses" form the subjects of the concluding chapters of this work. As in the case of the other sections of the book, these latter chapters are full of suggestive thoughts. The book is a thoroughly wholesome one, and Mr. Dunn may be congratulated on its production.

Magazines for March.—*Harper's Monthly Magazine* contains several notable articles; among others, one on "Modern Spanish Art," and one on "The Empress Eugenie and the Court of the Tuileries." "Mère Pochette" is an interesting story, and Mr. W. Black's "In Far Lochaber" continues its serial course. A very fine page engraving of the "Last Scene in *Hamlet*" forms the frontispiece to the number. *St. Nicholas for Young Folks* contains a wealth of interesting reading for children. It is a sensibly written magazine for the young. In *The Century Magazine*, Mr. G. Kennan's article on "Russian State Prisoners" will be read with interest; as also will an article on "Bismarck," a full page portrait of this celebrity being given in this number. The article on, and the illustrations of, "Salisbury Cathedral" will delight those who are interested in our ancient churches. "The Home Ranch" is an excellent and graphic paper on life in the Wild West.

A church in a Wisconsin town is probably the only religious edifice in the country which depends upon champagne bottles for its drainage. When the church was built, funds were very scarce, and many small economies were practised. The congregation on first occupying their place of worship, found that it was uncomfortably damp. The fact was mentioned to one of its members, who said: "I'll tell you how to remedy that. Go into my cellar, and you will find enough champagne bottles to build a drain with. They are often used for that purpose in England, and when once laid they will last for ever, if not allowed to choke up." The bottles were secured, the bottoms deftly knocked off, and the necks abbreviated in length. Then, by placing the neck of one bottle in the bottom of another, and so on, a drain was constructed which has kept the little church "extra dry" ever since.

The Dosage of Cocaine.—A medical journal states that it is impossible to name a dose of cocaine that is safe for all individuals, since many persons are unfavourably affected even by small quantities. As a general rule no external application weaker than 20 per cent. is satisfactory. Taken internally, cocaine may be exhibited in doses of from one-quarter grain to one grain. For hypodermic administration a 10-per-cent. solution should be employed, but not more than ten minims used. In operating for fistula, for the removal of small tumours, or for circumcision, first paint the surface with a 20-per-cent. solution, then wait five minutes; after this inject hypodermically one or two minims of a 10-per-cent. solution by various punctures around the seat of operation. To extract teeth under cocaine, at least one grain must be injected into the submucous tissues by three punctures opposite the root or roots of the tooth to be removed. Operate ten minutes after this. Great care is needed, as cocaine produces faintness, and in some persons a degree of collapse very alarming, and not devoid of danger. Cocaine rapidly develops fungus, which renders its solutions dangerous.

Our Letter-Box

"Conference [maketh] a ready man."—*Bacon.*

NOTICES TO CORRESPONDENTS.

All Communications for the Editorial Department (including Books for Review, Specimens of Sanitary Appliances, &c.), to be addressed to "The Editor of Health," 2, Paternoster-square, London, E.C. *Those intended for the Publishing Office to be sent to* Mr. A. P. Watt, The Publisher, *at the same address.*

RULES FOR CORRESPONDENTS.

Owing to the mass of letters which reaches us each week, we respectfully direct the attention of Correspondents, desiring replies in the Letter-Box Department of Health, to the following rules:—

1. All questions are answered free of charge in the columns of Health.
2. All letters must be legibly addressed to "The Editor of Health, 2, Paternoster-square, London, E.C.," *and to no other address.*
3. Questions to which answers are desired by post, are so replied to solely at the Editor's discretion. If no answer is sent by post, the query will be replied to in the "Letter-Box" columns of Health. A stamped addressed envelope must accompany all queries to which a private reply is desired.
4. Addresses of physicians and surgeons will, as heretofore, be forwarded free to Correspondents on their enclosing a stamped addressed envelope for reply.
5. Correspondents are requested to write on one side of the paper only, and to make their inquiries as brief as may be consistent with clearness.
6. From the necessity of sending Health to press early in the week, no Correspondent can be replied to in the "Letter-Box" columns in the same week in which the inquiry is received. Replies crushed out of any issue will be found in the succeeding number.
7. No Post Cards must be used in sending queries. Violation of this rule deprives the sender of the privilege of a reply.

LETTERS TO THE EDITOR.

SMOKING AND CANCER.

Sir,—There may be a good deal of truth in what "Nerve" says, but of course he has gone to extremes with his views. I am sure no laryngologist of any standing is inclined to attribute the perichondritis of the Crown Prince to smoking. As to the influence of the latter in causing cancer of the lip and tongue, there is still much difference of opinion, and those of us who do believe that such disease is more commonly found in smokers than in non-smokers, are by no means ready to admit that it is the tobacco which causes the cancer. It is rather, in my opinion, *the way in which the tobacco is smoked.* Women who suffer from cancer of the lip (and they are very few as compared with men) are almost invariably smokers, but instead of the meerchaum or briar, they use the short dirty clay, the more effectually to conceal their indulgence in the little vice. Its hot broken end rubbing against the lip may set up an irritation which may end in a cancer. Men who suffer in the same way, and whose disease is traced to the habit of smoking are usually found to have used a clay pipe. Mr. Jonathan Hutchinson, in an article on the Local Origin of Cancer, in the *Medical Times and Gazette* of June 22, 1881, calls the condition by its true name—"clay-pipe cancer"—and adds, somewhat significantly, "It is very rare among the richer classes, because they are careful to use clean and smooth mouth-pieces to their pipes." A more recent writer on diseases of the tongue, Mr. Butlin, though considering that smoking to a certain degree does predispose cancer, says there is no evidence to prove that cancer is more common among smokers than among non-smokers. He adds that if smoking causes sores or patches or a chronic inflammatory state of the tongue, it predisposes the individual tongue in which these conditions arise to cancer; but if it produces no appreciable effect on the tongue, it cannot be said to predispose to cancer. If smokers avoid short dirty pipes, and also the habit so many acquire of holding the pipe always in the same place, and smoke in moderation, they run very little risk of inducing a growth of cancer. Of course the disease may occur from other causes in those who smoke.—I am, Yours, &c.,

Chirurgeon.

Sir,—I think your correspondent who writes upon the subject of "Smoking and Cancer" has taken somewhat of an alarmist's view of his theme, and if he considers the fact for a moment that there

are thousands—nay, millions—of men who smoke incessantly and in whom cancer never develops, he will probably feel the necessity of admitting that the connection between smoking and cancer is by no means as intimate as he apparently believes at present to be the case. A person who is predisposed to cancer will develop cancer whether he smokes or not, while a person who is not predisposed to cancer will not become cancerous—either through drinking, smoking, or by any of the means which have been alleged as acting as exciting causes of the disease. To show more clearly what is understood by the term "predisposition to cancer," reference may be made to the divergent effects which sometimes follow blows in certain cases. For example, a man receives while at work a trivial injury to some part of his body, amounting to nothing more serious than a scratch or a contusion. But it comes to pass that the slight disturbance in the nutrition of the part is never recovered from, and in the course of a short time a malignant growth develops at the part, of which he ultimately dies. Another man, however, may be injured in a similar manner and under precisely similar circumstances, and nothing untoward takes place.

Thus, common experience establishes the fact that there are persons in whom cancer is readily excited by trivial causes, and such persons are generally held to possess a predisposition to the disease, which is especially prone in later life to become actively manifest. To say, therefore, of a man that he died a victim of tobacco is not strictly true. Even if we admit that the irritation of the stems of clay pipes and the use of strong tobacco have some influence in causing the development of cancer, it is essential to recollect that there are so many other situations in the body for which cancer exhibits a predilection that if men predisposed to cancer did not smoke, they would assuredly fall victims to the disease attacking some other part.

Smoking does not cause cancer in the true sense of the term, nor can it excite cancer into activity unless the person happens to be predisposed to the disease. It is only logical, therefore, to conclude that as it is not possible to predetermine whether a person has or has not any cancerous predisposition, the pipe and cigar may still be regarded as being harmless, provided that clay pipes and strong tobaccos and cigars, for the sake of expediency, are eschewed.—I am, yours, &c., SURGEON.

SIR,—The keynote to the relationship between smoking and cancer is to be found in the observations of Messrs. Clarke and Eve. They have shown conclusively that tobacco frequently sets up a superficial glossitis, or chronic inflammation of the epithelial structures covering the surface of the tongue. Under certain conditions, as yet unknown, these epithelial cells continue to proliferate or increase in number, and ultimately they invade, or eat their way into, the subjacent structures, and give rise to the form of cancer known as epithelioma. Only a very small minority of smokers suffer from glossitis, and when epithelionia follows the glossitis, one naturally feels inclined to believe that it has been the predisposing cause. It must, however, be remembered that glossitis may be set up by many other causes, such as syphilis, alcohol, a diet too rich in condiments, and decayed teeth. Before we can, therefore, set down a particular thing as the cause of a disease we must carefully eliminate all other causes; and even then we may not have arrived at the truth, and may have to content ourselves by saying he has such and such a "diathesis" or "constitution." For instance, two people acquire inflammation of the lungs—in one the inflammatory materials thrown out are re-absorbed, and the lung returns to its normal condition, while in the other the inflammatory materials are re-absorbed over the greater part of the lung, except at certain points, and consumption is the result. We explain this peculiarity by saying the last individual had the consumptive "diathesis" or "constitution," and was not able to throw off the inflammatory materials deposited in the lung tissues. It perhaps might be said that the person affected might not have had consumption if he had not had inflammation of the lungs, but, all the same, we are only justified in saying that the pneumonia was the exciting cause, and not the direct cause, and we have yet to discover why a certain part of the lung did not clear up.

In the letter by "Nerve" no mention is made as to the relationship between syphilis and cancer. As is well known, during the course of secondary syphilis certain inflammatory conditions appear on the mucous covering of the mouth, lips, and tongue, and are known by the name of mucous patches. These inflammatory mucous patches frequently last for months, and are greatly aggravated by the use of tobacco, alcohol, pepper, mustard, &c. In fact, in order to cure them, absolute cleanliness of the mouth is indispensable, and abstention from tobacco and alcohol must be rigidly enforced. Now, it is often found that in after-life epithelioma frequently appears at the spot where one of these mucous patches had lasted for many months, and had proved more than usually rebellious to treatment. The relationship, therefore, of cancer to syphilis is

"ELECTRICITY IS LIFE."
(TRADE MARK.)

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WORLD-FAMED

GALVANIC BELTS,

FOR the CURE of NERVOUS DISEASES.

HAVE RECEIVED TESTIMONIALS from

THREE PHYSICIANS to

HER MAJESTY the QUEEN,

THE ACADÉMIE DE MÉDECINE of Paris and

FORTY MEMBERS of the

ROYAL COLLEGE of PHYSICIANS of LONDON.

RECENT TESTIMONIALS.

GALVANISM *v.* RHEUMATISM.

5, East-crescent, St. Leonards, 14th February, 1888.

Dear Sirs,—It is due to you to say that my shoulder now appears quite well, after having worn your Galvanic Chain Band for rheumatism.

For six years previously I had much pain, and no liniments removed it.

Yours faithfully, F. B. ASHLEY.

Messrs. J. L. Pulvermacher & Co., 194, Regent-street, W.

GALVANISM *v.* INDIGESTION and NERVOUS EXHAUSTION.

Oxford, 12th February, 1888.

Dear Sir,—I am writing to tell you of the immense relief your Belts have given me. My indigestion has vanished, and before I wore your Belt I always had to be careful what I ate, but now I do not give it a thought.

By my feelings of lively activity I feel certain that I am entirely cured, as the nervous exhaustion has disappeared, and I feel in my body that I am quite free from that complaint—Yours thankfully, F. HARRISON.

Mr. Pulvermacher, 194, Regent-street, W.

GALVANISM *v.* SCIATICA.

2, Devonshire-villas, Isleworth, W., 7th February, 1888.

Dear Sir,—I am happy to be able to bear further testimony in favour of your Galvanic Belt as a remedy for Sciatica.

In this case the Sciatica had confined the sufferer to his house for six weeks, but after wearing the Belt a fortnight he was able to resume work, and was quite cured at the end of three weeks from the time of first wearing your appliance.—Yours faithfully, THOS. WHITE.

J. L. Pulvermacher, Esq., 194, Regent-street, W.

GALVANISM *v.* BRONCHITIS.

22, Clayton-place, Barkerend-road, Bradford, 6th February, 1888.

Dear Sir,—I am pleased to inform you that your Galvanic Band has quite cured my son of a very severe attack of Bronchitis. His chest is now quite strong and free from cold, and he feels better in health than he has done for years.—Yours respectfully, E. HENSHAW.

Mr. J. L. Pulvermacher, 194, Regent-street, W.

GALVANISM *v.* GENERAL WEAKNESS and NERVOUS DEBILITY.

Joseph-road, Stoke, Near Guildford, 6th February, 1888.

Dear Sir,—It is with the greatest thanks that I send this testimony in favour of your galvanic appliances.

Three months ago I purchased your Combined Band for general weakness, and wore it according to directions, and now I can honestly say I am quite strong again. The languor and inability for exertion have entirely disappeared, and I am now quite well. I would not part with your Combined Band for any amount of money, and I advise all sufferers from nervous weakness and exhaustion to give your treatment a trial. I shall be pleased to answer any inquiries, and beg to remain yours faithfully, W. BROWN.

Mr. J. L. Pulvermacher, 194, Regent-street, W.

GALVANISM *v.* NERVOUS EXHAUSTION.

Oxton, Birkenhead, January 27th, 1888.

Dear Sir,—I am continually recommending your appliances to my friends, several of whom, as well as myself and family, have derived much benefit from wearing your Galvanic Belts.—Yours faithfully, H. HOPE.

Mr. J. L. Pulvermacher, 194, Regent-street, W.

GALVANISM *v.* LUMBAGO and RHEUMATISM.

94, Brunswick-street, Hackney-road, E., January 12, 1888.

Dear Sir,—Two years ago I had a severe attack of lumbago and rheumatism, and was confined to my bed for several days. I got worse and worse, and was obliged to call in a doctor, who informed me that I was suffering from the above complaint. I then sent for one of your Galvanic Belts, which acted like magic, for in a short time it completely cured me, and I have never suffered since. I consider your Galvanic Belt is worth its weight in gold, and I have lent it to several friends, who have derived great benefit from it.—Yours respectfully, H. R. HALES.

J. L. Pulvermacher, Esq., 194, Regent-street, W.

GALVANISM *v.* NERVOUS EXHAUSTION.

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J. L. PULVERMACHER AND CO.,
GALVANIC ESTABLISHMENT,
194, REGENT-STREET, LONDON, W. (nearly opposit Conduit-street).

more distinct than its relationship to tobacco, and I think it would have been well if "Nerve" had drawn attention to this fact instead of needlessly frightening people about tobacco.—I am, yours, &c.,
MEDICUS.

QUERIES AND ANSWERS.

REPLIES: GENERAL, SANITARY, AND MEDICAL.

[Readers of HEALTH will kindly note that when back numbers of the journal are desired, the letters containing such requests and stamps for the numbers should be addressed to the PUBLISHER of HEALTH, 2, Paternoster-square, London, E.C., and *not to the Editor*.]

D. L.—You must exercise care in your diet. Avoid vegetables for a time, and take Brand's Beef Essence and like foods, and white boiled fish; milk (peptonized with Fairchild's Powders) should also be taken, while Van Houten's Cocoa should be taken in preference to tea and coffee. Rest after your meals as a necessary rule of health. Why do you take bicarbonate of soda at all? Try Vichy Pastilles instead. If not cured, write again.

EUPHEMIA.—Drink Vichy Water regularly, and avoid all alcohol for a time, and rest and sleep with the feet raised. Apply a little plain dusting-powder to the part and take fifteen drops Fer Bravais after meals, in water, thrice daily. Wear roomy boots and shoes.

SODIUM.—It is possible that there may be some stricture, real or merely spasmodic. If the hæmorrhoids trouble you, try Bayley's Remedy (17, Cockspur-street, London, S.W.), and continue to avoid constipation by careful selection of diet. The medical opinion you obtained is probably quite right. Occasionally cases like yours improve through the simple means of taking a little castor oil every second day. Write again, if not bettered.

B. VANSITTART.—You had better employ the formula given in the pamphlet, "A Lecture to Young Men" (post free 1s. 1d. from Mr. Renshaw, 356, Strand, London, W.C.); if, however, the preparation you name agrees with you, by all means give it a fair trial.

NEW READER.—1. See advice given to "G. P. P." in the present number with reference to food, and see that you rest regularly after your meals. If you are troubled with flatulence, take five drops of Pure Terebene on sugar after your meals. Do not overload your stomach, but rather eat less than you feel you require, and thus favour easy digestion. 2. If chilblains be present and unbroken, apply a lotion, night and morning, composed of equal parts of soap liniment and tincture of cantharides.

VERITAS.—All the symptoms you name indicate some displacement or similar condition of internal organs. Your only wise course is to consult a competent physician in your city accustomed to treat such ailments. Do not delay taking such an opinion. We can send you addresses of physicians, if you desire it.

PHILLIS.—We advise you to consult the French Hygienic Society, 56, Conduit-street, London, W., and use their Pomade Trichophile for the cure of scurf. This society will also be able to advise you regarding the use of a harmless dye or restorative for grey hair.

W. D.—1. Try Bokö̈l in place of the stout; it is sold by Davis, Bergendahl & Co., Quayside, Newcastle-on-Tyne. Continue to take the Cod Oil, but use Scott's Pure Cod Oil Emulsion. For the relief and cure of your digestive ailment, note advice given to "Alfred Hay" in last week's HEALTH. 2. For the cure of the other case you name, we advise the use of injections of tepid water, night and morning—half a teaspoonful or so of Condy's Fluid being added to each tumbler of tepid water used. Strengthen the system by nourishing food and Bokö̈l, and give twenty drops Fer Bravais after meals, in water, thrice daily. If not cured, write again.

CANTAB.—1. Arsenic is commonly used, but, it is needless to add, this or any other remedy can only be employed by a dentist. 2. There is no rule; all depends on the patient's constitution. The sensations are only momentary under nitrous oxide gas.

VENI VIDI.—You will find full directions for treatment by diet and tonics in the pamphlet recommended to "Mero" in the present number. Peruse this carefully, and persevere in its directions.

F. M. P. D.—You have been in the hands both of English and Scottish quacks. You must persevere with the directions given in the pamphlet you have read; follow out the treatment by the diet ordered and by taking a cold or tepid sponge bath each morning. Avoid late suppers, and guard against constipation. Do not sleep on your back, and have a hard mattress put on your bed. You suffer from no disease whatever.

CHEMIST.—Your questions are difficult ones to answer, and, indeed, can only be satisfactorily answered at all by a surgeon, after examining you. We advise you to see a competent surgeon in your city, first of all, and submit your queries for his judgment. With a proper truss—the fit is an important matter—you may live your ordinary life, we should say.

GIVE US THE TRUTH.

The Christian Union of Friday, January 20th, says:—Some time since we quoted from the *Gloucester Herald* an article announcing and describing the complete victory of Warner's SAFE Cure over that terrible malady known as Bright's Disease. The same article was copied into many of the leading papers of England, and in most cases notes were appended stating that its source was above suspicion. Considering the fact that this disease has baffled the best efforts of the medical profession for over fifty years, we were surprised that our exchanges did not consider the matter important enough to call for editorial comment. It seems strange that the Press, supposed to have the interests of the people, and especially the sick ones, at heart, should silently receive the news that a terrible disease has apparently received its death-blow, and been conquered. We thought their silence necessarily cast very grave doubts upon the truthfulness of the statements.

We therefore proceeded with caution—but at the risk of being the innocent means of advertising a medicine of doubtful efficacy—to call attention to the SAFE Cure, with a statement that one or two things must be true—either a wonderful cure for a dread disease has been discovered, or else a set of respectable men had combined with a well-known and reliable paper to swindle the credulous in a very bad way. Our readers will agree with us that it is no small matter to sufferers which of these be the fact. But how is it to be decided? Will the medical profession discuss the matter, analyse the cure, and test its efficacy? Or will the doctors pass it by with the remark that it might be useful in certain peculiar cases.

We do not know whether the medical men are doing their duty to the public by analysing and testing this new and pretentious cure, but we do know that the public are testing it for themselves. As we mentioned a short time since, Mr. J. H. Kilminster, of Kingsholme, Gloucester, had been reclaimed to health by the use of the SAFE Cure, even after his medical advisers could do him no good, and his death was expected at any time. Mr. Kilminster, is Bandmaster of the 1st Gloucester Engineers, and his case has become widely known, and by his friends his complete recovery is considered little short of a miracle. Mr. John Hope, of 24, Cottingham-street, Sheffield, has received the most marvellous benefits from the use of the SAFE Cure, although two physicians could only succeed in "patching him up a little." Others of our people have taken the SAFE Cure with benefit, and others are now taking it. This is all very well in its way, and no doubt time will see Warner's SAFE Cure more fully established. In the meantime Bright's Disease is killing the people, and the dying patients are afraid to try the remedy unless ordered by that awe-inspiring functionary, the medical man. Looking upon the doctors as ordinary men of business who hate successful opponents just as other business men do, it is not surprising that they do not receive with open arms the nostrums of all who force so-called specifics upon the public; but we, as an advanced nation, expect more from our medical men. We like to think of them as a band of warriors drawn up to frustrate the ravages of disease, and to weaken the common enemy at every available point, and by every conceivable means. What a sorry spectacle an army would present if each officer and soldier were to look with jealousy upon the attempts of all others to crush the opposing forces! Let a man who may be deemed the perfection of insignificance invent an appliance or method to aid in the destruction of his fellow-man in war, and his attempt will be gratefully acknowledged by the War Office, as an encouragement, whether it be promising of good or not; and if his invention should prove, upon examination, to be of real value, his name will be made for ever, while those who use his weapons will be untiring in the sound of his praise. But the inventor of a new kind of ammunition to be used in the war against disease has no tribunal by which the efficacy of his discovery may be tried and judged. In most cases, whether it be good or bad, it is met by those who ought to be capable of judging and testing with a few doubting and slighting remarks. There are, however, some who will give an honest opinion even against there own interests, as witness the large number of the more intelligent physicians who are gradually being won over to acknowledge the merits of Warner's SAFE Cure.

G. B. L.—See advice to "C. Beare" in last week's HEALTH.

M. S. P.—"Rosiness" of your cheeks is surely not a disease. On the contrary, most persons would be only too glad to possess such a sign of health. If caused by cold use Borthwick's Winter Cream (advertised in our pages) as an external application.

CRITIC.—Are you aware that the treatment of corpulency is a highly debatable subject, on which the best authorities are by no means agreed? From Banting to Ebstein there are infinite variations in opinion. The real fact is that what suits one patient will not suit another; since different methods have each their own successes. This will explain the divergence of opinion to which you allude

W. J. T. — Thanks for your kindly letter. 1. The Geddes' Hemlock Bark Extract has a high repute in such cases, It should be used as directed on the bottle, as an injection by aid of a nasal douche. You should use a tonic as well (*e.g.*, a teaspoonful of Syrup of the Hypophosphites, after meals, in a wineglass of water), and try what a visit to the seaside will do for you. Sea air often cures such cases. Do not tamper with probes; they can only be used by a surgeon. 2. There is no truth in the idea you name regarding coffee.

Charles Head. — Give Dahl's Cakes (advertised in our pages) a fair trial for the cure of constipation. They have acted very successfully in many cases which have been reported to us.

C. C. P.—Why not try the Coca Tobacco? It is not depressant, and is highly agreeable to use.

Nix.—Marshall's "Tritola" is that you should take regularly, in the form of milk-puddings. Try also the "Ptyaloid" made by Marshall (Ibrox Flour Mills, Glasgow); it is a predigested food.

Cinchona.—The pan-closet in use is at the root of all your troubles. It is an effete invention. Fit up one of Twyford's "Unitas" Closets and you will find your troubles to disappear. See also that there is an efficient trap at your drain outlet, by way of disconnecting your house from the main drain or sewer.

P. Park.—1. Give Howie's Filter a trial. 2. Nearly fourteen per cent. 3. The death-rate is about 24 per 1,000.

Simpleton.—You might try the mixture recommended in the pamphlet, as you could take it with you on your journeys. It may be that your mode of life is against you. Frequent travelling acts injuriously on some constitutions by inducing nervous ailments.

Vixen. — Try the effect of dusting Woolley's Sanitary Rose Powder on the feet, under the armpits, &c., after washing, We should also recommend Calvert's Carbolic Soap or Coal Tar Soap to be used for washing the body, and of course the clothes should be frequently changed. Occasionally such an ailment is connected with derangement of the general health. Try also, therefore, the effect of giving fifteen drops of Fer Bravais after meals in water. If the case is not cured, write again, and we will recommend some further treatment.

M. M.—Take five drops of Pure Terebene on a piece of sugar after meals when the symptoms you name trouble you. Clothe warmly in Messrs. E. Ward & Co.'s (Bradford) Woollen Underclothing, and try taking a dessertspoonful of Scott's Pure Cod Oil Emulsion after food. These means will enable you to ward off lung ailments at large.

Paradox.—If you are wise you will do as the pamphlet advises you regarding diet and the use of Cascara Cordial. Moderate cycling will do you no harm. If a tonic is required, try the Syrup of the Hypophosphites as recommended in the pamphlet.

F. James.—We advise you to give up beer and take Bokŏl instead to dinner. The belt you name might certainly be tried. As you confess to improvement in your health, we advise you simply to continue to live carefully, and above all to neglect your troubles. If you brood over them (and they are more fancied than real) you will not recover your tone.

Summit.—Look to the ventilation of your bedroom first of all, and take the Cod Oil Emulsion and wear the woollen underclothing recommended to "M. M." in the present number. You should sleep in flannels. Avoid late suppers. If your digestion is disordered, see advice given to "Alfred Hay" in last week's number.

F. J. B.—Apply to your druggist, and if he does not keep the tabloids, apply to Messrs. Burroughs, Wellcome & Co., Snow Hill-buildings, London, E.C. Both medicines you name are made in tabloids by the firm named, and full directions accompany each phial.

Lorna.—1. Apply a lotion consisting of equal parts of tincture of cantharides and soap liniment. Label "Poison: For outward use only." Internally, brace up your system by taking the Cod Oil Emulsion recommended to "M. M." in the present number. Wear Ward's Woollen Underclothing all winter as a preventive. 2. You should not take coffee after dinner, and you should not take any food within at least an hour of bedtime. Try milk, peptonized with Fairchild's Powders; white boiled fish; soups made with Brand's Beef Essence; stale bread only, and avoid much vegetable food. Rest after meals regularly.

Camden Town.—Apply a little boracic ointment to the parts night and morning, and internally take a teaspoonful of the Syrup of the Hypophosphites after your meals in a wineglass of water twice daily. If not cured, write again. Avoid all irritation of the affected parts.

D. F.—Wash the irritable parts with tepid water night and morning, and thereafter apply, as a lotion, a little Pure Hazeline. This may mitigate the sensitiveness. As regards the other symptom, give the Syrup of the Hypophosphites a trial as ordered to "Camden Town" above. It is probable you require some such tonic.

Macduff.—Sit and rest with the feet slightly elevated, and have the foot of your bed also raised, so as to favour the return of the blood in the veins. It is probable that a Martin's Bandage, properly applied, would assist you. Bathe the feet night and morning with a lotion made by adding one part Hazeline or Pond's Extract to three parts cold water.

Interested Householder. — Shone's system of ejecting sewage so as to cause a perpetual discharge from pipes is in operation at Eastbourne, Winchester, &c. The ejectors are worked by compressed air, which, of course, demands engine-power or water-power for its production. The sewage comes into collecting stations, where the ejectors are situated.

Athlete.—Maclaren's books on Physical Exercise (published by Macmillan & Co., London) are the best guides we know to a knowledge of diet, &c., required for training in athletics. You would, however, do wisely to consider whether or not you are not liable to injure your health in the exercises you name.

Mero.—Read the pamphlet, "A Lecture to Young Men" (post free for 1s. 1d., from Mr. Renshaw, 356, Strand, London, W.C.), and learn therein the true rules of health.

THRILLING EXPERIENCE OF A CUNARD S.S. CO.'S ENGINEER.

A leading Liverpool daily paper says:—"A day or two ago a gentleman, while in conversation with a prominent army officer, was made acquainted with a most thrilling account of prolonged suffering and ultimate rescue experienced by one of the oldest engineers in Liverpool. The name of the latter gentleman is Mr. William Buchanan, who, upon being visited, made the following statement: 'I have been twenty-four years in the service of the Cunard Steamship Company, and I reside at 81, Derby-road, Kirkdale, Liverpool. Two years ago, while attending church, I was suddenly attacked with a most excruciating pain in my head, which so completely prostrated me that I had to be conveyed to my home. Then followed twelve months of agony, which it is utterly impossible to describe. I had to resign my position, being entirely incapacitated from work. Medical opinion was divided as to what my malady really was. One doctor decided that I was suffering from a rheumatic affection of the brain, another that it was an overflow of blood to the head, and a third that it was acute neuralgia of the head. All agreed, however, that it would lead to softening of the brain. Six of the most eminent physicians in Liverpool attended me, but afforded me no relief. My case was regarded as incurable, and my sufferings were so great that I often became unconscious and fairly crazy from pain. I could neither see nor hear for days at a time, and during the fearful attacks of pain my cries often attracted the attention of the neighbours. My house was pointed out as one in which a man lay at death's door, and some of my paroxysms of pain were so great that it required two and sometimes three strong men to hold me in bed. My physicians held consultations, but all of no avail. My sufferings remained the same. My family were in despair, and at one time they regarded me so near death that, in addition to three physicians who were in attendance, two clergymen were summoned to my bedside. At that time, my wife's attention was called to a new remedy which was then being introduced, and which claimed to be a cure for rheumatism and neuralgia. She procured a bottle; and applied the contents to my head. Neither she nor I had any confidence in the remedy, but it was like a drowning man catching at a straw, and it looked like the last hope. The remedy acted like magic. It saved my life. I feel sure, my family and my friends feel sure, that had I not used it I should now be dead, instead of alive and hearty and in perfect health, as you see me here. All other treatment had entirely failed, and, wonderful to relate, I have never had the slightest return since I was cured some months ago. I have re-entered my old position, and in giving you the foregoing facts, I can only repeat that St. Jacob's Oil—which is the remedy referred to—saved my life. My case is no secret. My friends and neighbours know all about it, and are likewise familiar with my terrible sufferings, and my former helpless and hopeless condition. My cure was considered so marvellous—it has become much talked over and is well known—that I have received over 200 visits and letters on the subject. To all of these I have simply stated the facts as I have related them to you. A call was then made upon Messrs. Budden & Co., Chemists, 399, Stanley-road, Kirkdale, from whom Mrs. Buchanan procured the oil, and Mr. Gill, the Manager, fully verified the statement which had been made to the reporter, and said that this was only one of the many remarkable cures effected by St. Jacobs Oil which had come under his personal notice. He also added that his firm were daily receiving expressions as to the wonderful benefits people derived from the use of this marvellous oil, especially when suffering from rheumatism or neuralgia.'"—[2308.]

G. P. P.—Try a vegetable dietary—stewed fruits, apples or oranges, &c., and whole-meal bread, with Grant's Oat Flour for supper and breakfast; avoid tea and coffee; take Cascara Cordial, twenty drops in water, between meals once or twice daily.

Tempus Fugit.—Try the effect of taking the following pill:—Powdered ipecacuanha, half a grain; powdered capsicum, one grain; powdered rhubarb, two grains; extract of gentian, three grains. Six such pills to be made, and one to be taken half an hour before dinner when there is any liver irritation.

Box.—Inhale, at bedtime, the vapour of a pint of hot water to which Stern's Pumiline has been added. After your meals, take a dessertspoonful of Scott's Cod Oil Emulsion with Hypophosphites, thrice daily, as a general strengthening measure. If you have sufficient reaction, cold sponging to the chest will also be found useful each morning.

Sorcerer. — Read the pamphlet, "A Lecture to Young Men" (post free for 1s. 1d. from Mr. Renshaw, 356, Strand, London, W.C.), and note its advice as regards diets and tonics.

Charles R.—Wash your head once a week with tepid water and Bayley's Spermaceti Soap (17, Cockspur-street, Pall-Mall, London, S.W.), and rub into the hair roots each morning a little glycerine and borax. Avoid all hard brushes and small combs. Thereafter use a little brilliantine as a hair-dressing.

A. M.—Read the pamphlet "A Lecture to Young Men" (post free for 1s. 1d. from Mr. Renshaw, 356, Strand, London, W.C.), and attend to the directions there given as to tonics and cold sponging each morning. These directions will restore you completely if you will persevere.

O. A.—Try the effect of taking twenty drops of Cascara Cordial in water an hour before your breakfast, and repeat the dose, if necessary, in the afternoon. This will remove the constipation. As to diet, give up tea and coffee, and for breakfast and supper substitute Grant's Oat Flour. For the rest let your diet be light. Take as much open-air exercise as possible.

M. A.—Such a pill contains one grain of permanganate of potash, to be made up with Kaolin. Take two of these pills twice daily after your food, as directed.

A. Nixon.—The patient should abstain from solid food for a time. Let him take strong soups made with Brand's Essence of Beef, &c.; plenty of new milk peptonized with Fairchild's Powders (Burroughs, Wellcome & Co.); and later on a little white boiled fish and corn-flour. Avoid giving too much food at one time.

Fagit. — Take more open-air exercise, and use a rough towel to your face after washing. Use Bayley's Spermaceti Soap only, and if blackheads are present press them out, and sponge the parts thereafter with Bayley's Lavender Water (17, Cockspur-street, Pall-Mall, London, S.W.).

George Searle.—Drink Vichy Water regularly, and avoid alcohol. If your symptoms are specially troublesome, take fifteen grains citrate of potash, in a tumbler of water, twice daily. Drinking a tumbler of hot water twice daily, midway between your meals, is also a useful remedy for such irritation.

Aural.—Try the effect of taking a teaspoonful of Syrup of the Hypophosphites in a wineglass of water, thrice daily, an hour before your food. This will brace you up, and effect a needed improvement in your condition. Have a little finely powdered dry boracic acid blown carefully through a tube into the ear at night; and, of course, avoid colds and chills. Do not wear cotton wool in the ear.

Egeria.—Try the following for the hair:—Bay rum, two ounces; glycerine, two ounces; tincture of cantharides, one drachm; oil of bergamot, half a drachm; sulphate of quinine, ten grains; water, four ounces. To be used every morning, and to be rubbed into the roots of the hair, all other oils and pomades being avoided. Use a soft brush only, and wash the hair once in a week or ten days, at night, with Bayley's Spermaceti Soap and tepid water. Keep the hair short for a time.

Patrick Ford. — Nothing better than Lamplough's Pyretic Saline. Take it daily for a time as directed on the bottle.

Arthur C. — Brush the teeth morning and night with a soft brush and Dr. Pierre's Teeth Preparations. After smoking, wash out the mouth with Dr. Pierre's Eau Dentifrice.

R. Fuller.—For hair-weakness, use only a soft brush, and avoid all hard and small combs. Wash the head once a week, and rub into the scalp thereafter a little glycerine and borax, as a remedy for scurf. Keep the hair short. Each morning rub into the roots of the hair with a small piece of sponge a little of the following lotion:—Vinegar of cantharides, half an ounce; eau de Cologne, one ounce; rose water, one ounce. Mix.

Distress. — If you send us stamped addressed envelope, we will be glad to forward the address of a London specialist, who removes superfluous hairs by means of electricity. The operation is painless, and it is the only certain method of removing hairs.

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The price of numbers 1–156 has been increased to 4d. each, as, in consequence of the great demand for them, they are now nearly out of print. Nos. 157 to date may be had, price 2d. each.

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These letters, with hundreds more bearing similar proof that **BEECHAM'S PILLS** stand without a Rival, are in my possession, the names and addresses being withheld, with the object of not rendering the writers unpopular among less successful Medicine Proprietors.

THOMAS BEECHAM.

Printed for the Proprietor by Henderson, Rait, & Spalding, at 3 and 5, Marylebone-lane, Oxford-street, in the Parish of Marylebone, in the County of Middlesex, and Published by Alexander P. Watt, at No. 2, Paternoster-square, London, E.C.

Smoking and Cancer. See page 339.
Living Above One's Income. By Dr. A. J. H. Crespi. p. 332.
Great Eaters. By Dr. W. Curran. p. 328.

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A WEEKLY JOURNAL OF

DOMESTIC AND SANITARY SCIENCE.

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EDITED BY DR. ANDREW WILSON, F.R.S.E. &C.

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[The above letter, dated Sept., 1886, is from a medical gentleman in extensive practice in a large city in the North of Ireland.]

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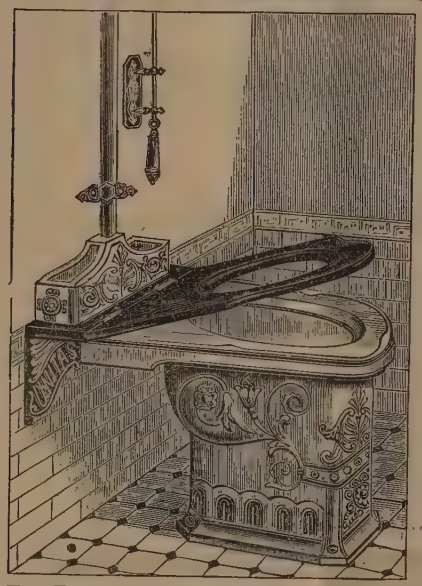

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HEALTH

EDITED BY

DR. ANDREW WILSON, F.R.S.E., &c.

LONDON: *FRIDAY, FEBRUARY* 24, 1888.

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Notes by the Way

BY THE EDITOR.

"Health is the foundation of all our physical happiness."—*Herder.*

DR. VILCHUR, of St. Petersburg, has been testing the action of boiling water on the germs of typhoid fever. He made a number of cultures of these germs, keeping them for two days at a temperature of about 33 degs. C., and then mixed them with known proportions of boiling water, immediately afterwards sowing the mixtures in jelly. The results showed that, when the volume of boiling water equalled that of the culture, the germs were partially but not wholly destroyed. When double the volume of boiling water was used, the germs were all killed. From experiments with the excretions of typhoid fever patients he found that all the germs, however numerous, were invariably destroyed by the addition of a volume of boiling water equal to four times that of the amount of the excretion. The disinfection of typhoid matter should therefore be an easy matter in view of these researches.

✣ ✣ ✣

THE inspectors of the Paris markets, says a contemporary, have only recently published their returns of the food consumed in that city during 1886. It appears that there was an increase of 2,500 tons in the consumption of meat, the figures being 153,000 tons of beef, mutton, and veal, 23,000 tons of pork, and 4,500 tons of horse-flesh; and of this supply one-third came from abroad. Twenty-four thousand tons of game and poultry were sold, of which Austria and Hungary supplied 190,000 partridges, 110,000 fieldfares, 60,000 hares, 27,000 pheasants, and 5,450 deer. Germany sent 168,380 hares, 159,000 partridges, and 2,180 deer. Belgium and Holland sent 39,000 wild ducks, 18,400 pheasants, and 4,800 blackcock; and England supplied 10,000 pheasants, as against 55,000 in 1885. Italy sent 1,700,000 pigeons, 185,000 quails, 60,000 guinea-fowls, and 10,800 chickens. Spain sent 2,100,000 larks and 117,000 partridges; and from Russia there came 3,500 white hares and 700 reindeer. Seventeen million seven hundred thousand dozen of oysters were consumed, an increase of upwards of 700,000 dozen, as compared with 1885. Temperance parties will hear with horror and disgust that the average yearly consumption of wine per head was forty gallons.

✣ ✣ ✣

I OBSERVE that a medical correspondent notes the case in France of an idiot fifteen years of age, who, not being able to pronounce a single word, incapable of receiving even the most elementary education that could be given to an idiot, daily hummed rather gracefully and correctly certain ancient airs, always the same, always in the same order, and without undergoing the least alteration from one day to another. Medical literature is not rich in facts of this kind.

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MOREL, the account continues, however, has published the history of an idiot who, the son and grandson of drum-majors, would, on having a drum and sticks given to him, at once execute "rolling" on it. The idiot now in question never had an instrumentalist among his ancestors, but, according to his mother, all the family were fond of singing, and this youth never heard anyone else sing but his father and mother. It has been utterly impossible to elicit the least spark from any part of the cerebral system of this degenerated being with the exception of one. It is, therefore, concludes the writer, evident that this one point was prepared by heredity, and that this child must have been born with instincts, just the same as the drummer referred to by Morel.

✣ ✣ ✣

A MEDICAL contemporary has recently given some wise advice regarding the diet of nursing mothers. It says that "the influence of the diet upon the function of lactation is a subject of such importance for the rising generation as to warrant frequent investigations by scientific authorities. It seems to be one of the evils

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32s. ,, 50 ½-bottles; or 9s. ,, }
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SOLE ENGLISH BRANCH:—
INGRAM & ROYLE,
LONDON: 52, FARRINGDON-STREET, E.C. AND OF ALL CHEMISTS. LIVERPOOL: FINNEY-LANE. BRISTOL: BATH-BRIDGE.
A FULL DESCRIPTIVE PAMPHLET ON APPLICATION.

inherent in a high degree of (so-called) civilization that women, in a large proportion, especially among the upper and middle classes, should suppress and ignore the physiological function of the secretion of milk, and abandon the privilege of nursing their children in the natural way. But this being the case, it is desirable that the best substitute be provided. The feeding-bottle is but a poor substitute for the mother's breast, and of late there is a tendency to give too diluted a milk. A wet-nurse is the best substitute for the mother herself, and a knowledge of the influence of the food upon the composition of milk ought to be widely circulated, at least in its chief features."

✣ ✣ ✣

DR. ZALESKI'S conclusions are—"1. That milk which contains an undue proportion of fat may have a very injurious effect upon the child. 2. A highly nitrogenous diet causes a great increase of fat in milk; the same kind of diet lowers the proportion of milk-sugar, but has very little influence over the other constituents. Alcohol exerts the same influence as a nitrogenous diet. 3. A proper composition of the milk may be attained, speaking generally, by the use of a proper dietary. 4. The lower animals are subject to the same laws as human beings in the above respects. 5. A large proportion of milk is derived, directly or indirectly (that is, by changes in the blood itself or in glands), from albuminous sources."

✣ ✣ ✣

"THE above conclusions," says my contemporary, "are directly opposed to the views of the laity on the subject. The wet-nurse, as a rule, is a highly privileged being, who must be allowed an unlimited quantity of butcher's meat and a good supply of stout. The amount of exercise usually taken is a gentle saunter at her own sweet will: active exertion is out of the question. Probably the diet has been previously very plain, and too often the sudden change influences the composition of the milk to the detriment of the child. Diarrhœa, of a more or less fatty character, is often the consequence, and Dr. Zaleski instances a case in point. Chemical analysis of a specimen of the milk of a wet-nurse revealed over six per cent. of fat, and inquiry was made as to the condition of the child. It appeared that the child was ailing ever since the services of the wet-nurse had been called into requisition. The latter was a poor girl, whose diet and whole course of life was changed when she became a wet-nurse, and that this injuriously affected the lacteal secretion was proved by the fact that her own child had been far from well since then. An immediate return to the previous mode of life was ordered for the nurse, with the best results."

✣ ✣ ✣

M. LEVEN, of Paris, lately made a communication to a medical society on the treatment of fatness. He holds that it is principally due to nervous disturbance, which causes the food to be transformed into fat. Treatment which aims at curing the nervous ailment should be adopted. Irritation of the stomach nerves should be guarded against. A diet which is easily assimilated should be employed, such as eggs, soup, and plenty of milk. It is well to avoid intellectual or physical fatigue. M. Grimaux stated that he had employed a diet composed of eggs, potatoes, and milk rice, and found himself benefited by this system.

Original Essays

"Life is not to live, but to be well."—*Martial.*

GREAT EATERS.

BY DR. W. CURRAN.

THE experience of all ages has proved that abstinence is more conducive to health and long life than repletion, and it is pretty certain that, as Dr. Pavy has shown, "there is far more evil to be encountered, attributable to too much food being taken than to too little. . . ." Where the living is plain and simple, and the dictates of Nature are followed, there is no need for weights and scales, but how many are there who would not be in an infinitely better state if they lived upon a weighed and measured allowance of food and drink? Seeking for what is pleasurable instead of natural, the promptings of instinct are overruled, and it is the inclination instead of appetite that regulates what is consumed. Were it not for the temptation to excess, induced by the refinements of the culinary art, the physician's aid would be much more rarely required than it is at present," and to illustrate these points by the force of example or the teachings of history and biography is one of the objects of this little essay. The other is to show that moderation in this, as in other matters, social, domestic, and otherwise, is, or ought to be, our guide in respect of the kitchen and the larder, and we should never forget the old saw, that "an empty house is better than a bad tenant."

It is truly said in the well-known Oordoo story of the Four Durwesh in the "Bāg o Bahār" (the Garden of Roses) that "the existence of man depends on eating and drinking; he is the worm of the grain:" and some scientist has called him pre-eminently *the* cooking animal. Whether this is so or not we need not now stop to inquire. All that it concerns us to know is that he requires a considerable quantity of plainly cooked animal or vegetable food for his support, and that without this he soon loses flesh and strength if he does not become otherwise unfitted for discharging the ordinary functions of his office. On the other hand, we all know that moderation—nay, indeed, abstinence of one kind or another—is the rule of our day, and we have only to go into the next street to see that hundreds, thousands of our race have no other heritage than this.*

* This is the latest census or record of the fact I have seen. It speaks but too forcibly for itself:—"*The 'Waterbury' Census of the Unemployed.*—The following are the results of the first ten days' census of the unemployed up to Thursday night (December 15) undertaken by the Waterbury Watch Company:—

	Unemployed.	Dependants.
First nine days	13,664	29,246
Thursday, 15th	1,345	2,808
Total	15,009	32,054

Total unemployed and dependants.....47,063"

The following is the latest census I have of the *Pauperism of the Metropolis*:—"The weekly return of metropolitan pauperism shows that the total number of paupers relieved in the first week of the current month was 102,559, of whom 59,099 were indoor and

JENSEN'S COD LIVER OIL is acknowledged as the best because it is the only Oil made from absolutely fresh Livers. It prevents all Coughs, Colds, Asthma, Bronchitis; it makes the Digestive Organs act, and is the only remedy of any value in cases of Consumption; it is sweet and pleasant—cannot by any possibility cause any aftertaste, while all its nourishing virtues are retained. Of all Chemists, &c., in bottles, each Wrapper bearing the Registered Trade Mark (an Iceberg) if genuine, at 1s., 2s., 3s. 6d., and 6s. 6d.; or, post free, of HERTZ & COLLINGWOOD, 101, Leadenhall-street.

Many persons, indeed, voluntarily devote themselves for religious reasons to a life of renunciation and toil, and speaking of La Grande Chartreuse in *Good Words* for December, 1887, p. 821, the writer, a Mr. Spiers, says that "a monk's food consists of one meal a day. This is pushed in by a sliding grating in the cloister wall, so that he never sees the person who brings it. It is made up of soup, fish, and vegetables on ordinary days, and on Fridays and during Lent of simple bread and water," and as a consequence, we suppose, the glimpses one gets at these poor men are, with one or two exceptions, 'of pale, worn, death-like faces, with the shadow of a great sorrow on them.' A writer in the *Echo* of December 8th, describing a visit he recently paid them, says that "these monks—the brethren at Melleray, near Cappoquin—live upon one meal a day, a purely vegetarian meal of cabbage, carrots, potatoes, bread, &c., with milk. Only one meal a day," he adds, "at two o'clock in the afternoon, after they have been up at choir service or field work twelve mortal hours!—they rise at two in the morning and retire to rest at seven in the evening." I introduce these details to show, by way of contrast, that man needs but little in the way of food here below, and to advise him to stick to that same "little" if he would keep out of harm's way, and keep at the same time a sound mind in a sound body.

Describing a Greek convent he visited in Syria, Mr., now, I believe, Canon, Tristram says ("The Land of Israel," p. 266), that "the discipline of the convent is most severe. All are under a vow never to taste flesh meat. . . . Eggs are permitted on Sundays only. On other days the allowance is a small brown loaf, a dish of cabbage broth, a plate of olives, an onion, half an orange, a quarter of a lemon, six figs, and half-a-pint of wine, for each brother during the twenty-four hours. . . . No wonder that they are (he says) attenuated and meagre, most cadaverous and pallid in feature, and without any sinew, wholly unfitted for any physical exertion, which, however, is rarely required of them." Mrs. Fawcett lately stated, at St. George's Hall—so at least I learn from the papers—"that because hens and cows are of the inferior sex, the monks of Mount Athos exclude both from their precincts. And they have (it is said) paid for their stupidity, their butter and eggs imported from the 'world' are bad, and. . . . the boiled octopus and stewed eels of this cloister show the plight to which misogynist humanity brings itself."

But enforced or voluntary abstinence of this kind is not the subject of our song, and we need say nothing of such exceptional examples of starvation, or of its equivalent, the glasshouse, and the hulk as are furnished by the histories of Chatterton, Griffin, Otway, Savage, and others of our poets and novelists. This is Johnson's account of Otway's death, and it is so suggestive that I cannot withhold it. The struggles of the others and their sufferings are so well known that I need say no more about them. "Having been compelled," says our author, "by his necessities to contract debts, and haunted, as it is supposed, by the terrors of the law, he retired to a public house on Tower-hill, where he is said to have died of want; or, as it is related by one of his biographers, by swallowing, after a long fast, a piece of bread which charity had supplied. He went out, as is reported, almost naked, in the rage of hunger, and finding a gentleman in a neighbouring coffee-house, asked him for a shilling. The gentleman gave him a guinea; and Otway, going away, bought a roll, and was choked with the first mouthful." Savage was buried at the expense of his (prison) keeper.

Examples of that kind are familiar enough, *chez-nous-mêmes*. We need not go to history or biography either for them, they exist at our doors, and they are indeed far commoner than those that are contemplated by our heading. It is only your great man, or your wealthy man, that can afford to be habitually, at least, a "great eater," and, moreover, where this peccadillo exists, it is rather put out of sight by friends and others than otherwise. Hence, in some measure at least, the difficulty of procuring examples of this habit or weakness; and I can only recall just now a few instances in which this gormandizing proclivity cost its victims their lives, or led to other serious results or consequences.

Thus describing an interview that took place, for ulterior, that is to say, for matrimonial, purposes, between Charles II., when he was in exile, and the daughter of Gaston, Duke D'Orleans, Miss Frances Elliott says, under the heading of "How Charles II. lost an heiress through having a voracious appetite," ("Old Court Life in France," Vol. II., pp. 143-4), that after having disposed of a quantity of ortolans, an Italian pasty, "he threw himself upon a joint of beef. Not satisfied with that, he ended with a shoulder of mutton . . . . A despairing lover ought not (Miss Elliott thinks) to have such a monstrous appetite, or he should have satisfied the cravings of hunger beforehand." So thought Mademoiselle, and we find accordingly that she yawned and looked at him in amazement under her eyelids during this operation.

We also find that when, after staring at her "with his big black eyes, shaded by heavy eyebrows," for some time, he came to the point, the response was not satisfactory, "I hope," said he, "my Lord St. Germains has explained to your Highness the sentiments with which you have inspired me. I am, Madam, your very humble servant." Mademoiselle rose (we are told) to her feet, made him a formal courtesy, and replied, "Sir, I am your very humble servant," and there was an end of the wooing. The moral is, reader, that if, as a bachelor, you ever go a-wooing, you should not address your fair partner while you "are shovelling—as Charles was—huge pieces of meat down your throat," but look to the "inner man" beforehand, and behave otherwise like a despairing lover, or shall we say a—"dude."

(To be concluded.)

43,460 outdoor paupers. The total number relieved shows an increase of 6,481 over the corresponding week of last year, 8,314 over 1885, and 9,069 over 1884. The total number of vagrants relieved on the last day of the week was 1,208, of whom 1,059 were men, 124 women, and 25 children under sixteen. These figures are exclusive of the patients in the fever and small-pox hospitals, which on the last day of the week numbered 2,732." See further in this connection Lord Brabazon's "Social Arrows," pp. 60, 181, &c.

LIVING ABOVE ONE'S INCOME.

By Dr. A. J. H. Crespi.

"What can living above one's income have to do with good health?" Much more than you suppose, kind reader. Pecuniary anxiety is a prolific cause of disease: it breaks the spirit, ruins the temper, and prepares its victim for the worst and most incurable of illnesses.

Shakespeare knew everything: he entered into every man's feelings, and placed himself in every conceivable position. In that mine of inexhaustible wealth which he bequeathed to his country, and not to his country only, but to the whole world, there are to be found thousands of short and pithy sentences, more replete with wisdom than ten

times as many sermons. Of course he denounced debt. In a dozen words he vividly pictures the evils of borrowing; and no moralist has ever said as much in so small a compass. One passage in particular is oftener quoted than any other on the subject: it is that sentence in which Polonious warns his son Leartes against borrowing or lending:—

> "Neither a borrower nor a lender be;
> For loan oft loses both itself and friend,
> And borrowing dulls the edge of husbandry."

How true this is! He who lends, often loses the friendship of the man whom he tries to benefit as well as his money: he who borrows, not seldom finds that a heavy load presses him down. He loses heart. The world, his relatives, his wife and children, seem harsh, unfeeling, and unsympathizing. How can he bestir himself when duns are at the door, and insolvency threatens! Why should he be careful to curtail expenses when all the economy he can practice, while diminishing his comforts and luxuries, does not release him from the weight slowly crushing life, hope, and energy out of him? Life is too short for most men to pay off the debts which they can contract in a year or two. Debt accumulates like a snowball urged on by an untiring imp. The Bankruptcy Court clears many, it is true, who start again apparently unhampered; but at what a cost this apparent freedom is gained! At the price of broken faith, of dishonoured name, of ruined reputation, of troubled conscience. Many who, in despair, fling themselves into the rotten bark called the Bankruptcy Court, find that no sooner do their feet touch the deck than it begins to sink, and, in spite of their efforts, they founder in the waves, and their refuge becomes their ruin. There is something almost worse than crushing, hopeless debt; something ten times as common as insolvency. It is *living above one's income*. Something in English society drives thousands of men into extravagance. They are never in danger of disgraceful insolvency; never overwhelmed with misfortune; yet, from early manhood to extreme old age, they are never free from pecuniary anxiety; they always need a few hundreds or thousands to clear them from debt. They are always a little behind. *This* comes to more than they expect; *that* bill is heavier than it ought to be. They always want time to pay their debts, and to keep up appearances they resort to mean shifts and unprincipled expedients.

The wealth of England is enormous; the energy of her people marvellous, though in both respects several nations have of late pressed her close; and her prosperity so great, that there should be no excuse for this state of things. If Englishmen cannot live in comfort, poverty of the most painful description should drive the peasantry of Germany and Italy to the verge of despair. The average condition of the English surpasses that of any other people in Europe—except, perhaps, that of the Swiss and the French. There are more carriages and servants, and, unless travellers deceive us, more fine houses in Great Britain than in any other country of Europe. It nevertheless is true that debt hampers thousands of Englishmen, and extravagance goads tens of thousands to despair.

What is the cause? At one time I should have given an answer which I now think is not correct; but, in the course of a conversation some years ago with a very intelligent and shrewd Birmingham manufacturer—a keen observer of mankind, at least of its English varieties—an explanation was suggested which, taken with two others, clears away the mystery. The answer I now give I place before the reader: it may not satisfy him, but I suspect that greater objections might be urged against any other. How is it that so many Englishmen are heavily in debt? How is it that hundreds of thousands live above their incomes, generally ample enough with ordinary prudence to provide the comforts, though not always the luxuries, of life?

My answer resolves itself into three divisions. Though obliged to give them separately, I wish it to be understood that they generally go together; and one alone would seldom be sufficient. Moreover, I am not suggesting that my answer meets all cases; nor is it applicable to the dishonest and unprincipled, who live on the industry of others; nor to the idle, content to eat the bread of the charitable. It deals with the persevering, pushing, and prosperous Englishman, whose income is good, and whose industry and perseverance ought to furnish him with every necessary and comfort.

In the first place, the tone of living is too expensive and luxurious. Men with £300 a year have everything in a style requiring £500. Men keep carriages who cannot afford or need them. Five servants are kept where three should suffice. A hundred and fifty a year is paid for rent, when a hundred would be the largest sum that should be prudently spared for the purpose. Expensive dainties are served at table when it would be better not to have them at all. This expensive fashion of living is due to the false notions of respectability pervading all classes, even the poorest. Men are *expected*, no other word is sufficiently strong, to live up to a certain style; if they do not, down they go in public opinion; their very usefulness is impaired and their influence declines. They are pitied because they are poor, and despised because they will not incur debt. Whole streets and districts are in some towns appropriated to certain classes of people. Those who cannot, or will not, live in those streets put themselves under the ban of their class. Thousands of families pinch to keep up a position, painfully struggling to maintain appearances on inadequate means. What are they to do? If they curtail expenses they sink socially. Which is best—to be pitied and neglected, or to labour under pecuniary difficulties; to live in the world or out of it?

Such is the state of society that, if a family is unable, by reason of straitened circumstances, to associate with others of its class, it cannot move in another sphere. Social grades touch at all points, and are ill-defined, yet their members are debarred from intercourse with those of higher or lower grades. Custom has declared that certain things shall, and others shall not, be done in certain circles—there shall be a certain kind of house, style of furniture and fashion of dress—and those who do not wish to forfeit their claim to public respect must attend to these matters, or so much the worse.

In the second place, in every set there are persons of much larger fortune than common; these people, in spite of their wealth, cannot get into another sphere. Bound down by the customs of society, they cannot associate on terms of equality with the members of another clique. But their wealth makes them the arbiters among their acquaintances in all matters of expense. With five thousand a year they can do things out of the power of hundreds of persons in the same set with only one tenth as much. But it does not signify. Everything must be done in their style. Everybody must try to live as they do. They give a tone to a style of living already extravagantly luxurious. The worst thing that could happen to many little towns is for three or four wealthy families to settle in them. A system of extravagance forthwith commences which never ends.

In some cases, the best thing that could happen to the community would be that these large fortunes should be thrown into the sea.

Let me give an instance for the accuracy of which I can vouch. In one of the largest and wealthiest manufacturing towns in this country there are two hundred medical men, several of them persons of great wealth, many others are very well off. The district is a large one and the work heavy, but at least one-third of these men keep a carriage and pair, and very stylish affairs some of them are; and not more than a score are without a carriage of some sort. Probably fifty of the doctors who keep carriages and pairs would find a phæton sufficient for all the practice they are ever likely to have. But, no; every medical man in that great town who wishes to be thought a leading and prosperous practitioner, is expected to keep a fine carriage. The fashion has been set by a few men of fortune, and only poor men, and one or two medical practitioners whose position is too well established to expose them to contempt or suspicion, use a phæton. The *whole professional income* of several doctors who drive about in a carriage and pair would not pay its expense. Anyone could multiply similar instances of extravagance in deference to fashion.

In the third and last place—and it is to this that my acquaintance especially drew my attention—is not the immense wealth, the sinful profusion of England, at the root of much of the extravagance of the day? Are not the temptations to buy, the facilities for having every want, every whim supplied, the strongest inducements to launch out wildly? In some cases new wants spur men to redoubled energy, in others they ultimately lead to ruin. My acquaintance was in early life a mechanic, but, while his companions spent their money in beer and dissipation, he got a good house, expensive books, and handsome clothes. His wages were large, but not sufficient for his needs. This spurred him on; he often worked sixteen hours a day; new wants continued to come; he tried to get into a higher social sphere, to have things still nicer. For this money was needed. Slowly he forced his way to affluence and power. But it was the opportunity of getting what he wanted, the facility for purchasing luxuries that gave him, at least so he believed, the first upward impulse.

In a state of society, or in a country where the display in the shops was small and plain—where only the rich could get things really nice—there would have been no inducement to rise. I am convinced that it is the tempting display in the shops, the organized system of advertising in the present day, the ceaseless activity of factories and warehouses, pouring out over the land wealth of which the last century never dreamed, that makes ten of thousands of people long for comforts and luxuries out of their reach. To some extent the desire to get on in the world, to become wealthy enough to purchase luxuries—tempting to those who have them not, little cared for by those who have them—is a benefit to the country, and to it England owes much of her wealth; but even a good thing may be pushed too far, and the desire to be rich, or rather to have things we have not, may lead to extravagance, debt, and a premature and dishonoured grave.

Far be it from me to hint that I should wish to see the penury, idleness, and wretchedness of some parts of Europe substituted for the luxury, activity, and profusion of England. I should not. But I should like to see less blind adherence to custom, less deference to the voice of fashion, less false shame.

Let energy put forth its power. Let men seek wealth so that it does not become the only nor even the principal end of life. Let the poor try to become rich, the weak strong, the humble powerful, the ignorant wise. Let the productions of the whole world come to our shores, while we, in return, send forth the fruit of our labour. But let thrift be honoured before luxury. Let a quiet mind and a humble dwelling be preferred to pecuniary anxiety and crowds of retainers. Thrift is not parsimony. Economy is not ignoble. Let thrift and economy be exalted in the market-place. Let statues be erected to their honour in every house. True, the striving to keep out of debt may go so far as to degenerate into a vice; trade may fall off and energy lose a field for its display, if men, in their anxiety not to spend, destroy the demand for the fruit of industry. People who want nothing may rot in sensual idleness, and starve, though free from debt. But surely theirs is a happy mean. Better for the world, better for trade, better for everyone to keep out of debt—to bring his wants well within his income. Life would be sweeter, home happier, failures fewer, and the future brighter, were thrift and prudence to take the place of luxury and display. While from a sanitarian's standpoint the value of thrift can hardly be overrated.

Sir Edward Sieveking, in his well-known little book, "The Medical Adviser in Life Assurance," points out that the lives of men labouring under very heavy debts and acutely feeling their position—and the two things do not by any means necessarily go together—are decidedly bad; in other words, debt acutely felt is a strong predisposing cause of disease, and no wonder. How the spirits rise, the pulse quickens, the step gets lighter when some piece of unexpected good fortune befalls us; while, on the other hand, an unlooked for demand for money, which we are not in a position to meet, fills us with dismay, robs life of half its joy, and makes us feel that we have lived too long. Which is most likely to get over illness?

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CANCER AND DYSPEPSIA.

All the consequences of continued irritation are not yet known, but that they are varied and manifold cannot for a moment be doubted. By continued irritation we may produce inflammation, and "there can be little doubt that inflammation is a frequent cause of the formation of a tumour." A review of some of the causes of tumours may prove instructive and interesting. Mr. Butlin gives the origin of tumours as follows:—

"Long-continued irritation, without actual inflammation, may cause the formation of a tumour, *e.g.*, the formation of a cancer of the lip from the irritation of a dry and harsh pipe-stem. The frequent or continual contact of certain irritating substances may induce the growth of a tumour, as soot cancer in the skin-folds of sweeps.

"An injury may lead to the occurrence of a tumour. Two cases in my experience may be taken as examples: A young lady leaning out of the window was struck in the back by the fall of a heavy sash, and very quickly after the accident a sarcoma, which was rapidly fatal, formed at the point where she was struck. An old lady was looking on at a tennis match, when she was struck sharply on the breast by the ball, and where the blow fell there formed a large and quickly growing carcinoma.

"There are also certain predisposing causes, particularly of malignant tumours. Of these, some are actually tumour formations; thus, a simple warty growth may become an epithelioma. Others are inflammatory; chronic inflammatory conditions of the surface of the tongue (leucoma) may lead to epithelioma.

"In addition to these local predisposing conditions, there are several very important general conditions which may predispose to tumours. Age and sex are the most important of these. Fatty tumours are far less common in children than in adults; true carcinoma very seldom occurs in persons under thirty years of age. The distinctive organs of females are very liable to malignant tumours; but in parts of equal importance in the two sexes, such as the œsophagus, lip and tongue, men are much more liable to malignant disease than women. Anxiety and sorrow are thought to predispose to the occurrence of malignant growths. Residence in valleys is said to be much more productive of cancer than residence on hills and mountains.

"Lastly, tumours may be congenital, as nævi (mothers' marks) usually are. And, perhaps, they may be inherited, or the predisposition to them may be inherited."

An inquiry into the previous history of patients afflicted with cancer of the stomach reveals the fact that they have almost invariably suffered for years with dyspepsia. Now what is dyspepsia? It is that condition where digestion is not being properly performed, and the individual becomes aware subjectively that he has a stomach. Food has been known to remain in the stomach for days undigested, and in not a few cases the prolonged retention of food which the stomach cannot digest must cause inflammation. It is easy to understand, then, how, if causes like those already mentioned produce such dire results, continued irritation in the stomach may in time cause cancer. Those who have most to do with pathological museums inform the writer that increasing evidence tends to confirm the conviction that irritation of some sort is the most frequent cause of cancer.

Not every one with dyspepsia will have cancer of the stomach, but every dyspeptic is in the lottery. How shall one cure dyspepsia? asked a Duchess of Dr. Abernethy. "Live on a shilling a day, and earn it," was the pithy reply. The answer was good, but is by no means applicable to all. As one in a strait may have need of temporary help, so it is with the dyspeptic stomach, for such a stomach is an organ in debt. Help it to do its work with a pepsin tabloid after each meal, and soon the wonted vigour may return. If this does not answer, go a step further, and predigest the food by adding a little Zymine to it. The Kepler Malt Extract in milk is good food for a tender stomach.

STUDY AND HEALTH.

By P. J. Higgins, M.D.

SECOND PAPER.

After exercise, the muscles—of the hand and forearm particularly—are subject to rhythmic, automatic waves of contraction; that is, there is a tremor beyond the power of the will to control. So that writing and drawing, which require great steadiness of the hand and fingers, should never be taken up after recess, or at the commencement of the afternoon session. Of the elementary studies, mental arithmetic involves the closest application of the highest powers of the mind—drawing at once upon memory, reason, and judgment—and this may be taken up advantageously from half-past eleven to twelve. Breakfast digestion is then nearly if not quite completed, and intense application is least detrimental to the vegetative system.

The morning meal is usually light in material and amount; dinner, partaken of soon after noon (except in the largest cities), is the principal meal. It is "solid," in a physiological not less than in a popular sense, for it is most generous in amount, and usually rich in nitrogenized matters—flesh-meat, puddings, eggs, &c. After its ingestion, the digestive organs are taxed to their utmost capacity, and soon become loaded and distended with blood. The digestive system is quite extensive, and is richly supplied with blood-vessels, which are imbedded in rather loose tissue, so that they may dilate, to accommodate the sudden influx from the outlying portions of the body, together with the newly-absorbed products of digestion. The brain is thus deprived of its full supply; and if, by reason of severe study, it draws upon the circulation, the digestive organs are robbed of their needs, and their efficiency interfered with seriously. Intense application at this time does harm in another way. All the functions of the body are under nervous control. The digestive organs are mainly innervated by the pneumogastrics—two nerves arising from the lower portion of the brain, near the base.

Now as the thinking portion of the brain is situated on the outer surface, deep and perplexing thought robs the roots of the pneumogastric nerves of their circulation, and in this way depresses their influence. Lacking the proper nervous stimulus, the digestive juices become scanty in amount; movement of the digestive tube is enfeebled; the liver—that refinery where the crude products of digestion are purified and elaborated—loses tone, and allows the peptones to pass unchanged into the general circulation, giving rise to much discomfort and mental depression. Thus are laid the foundations of dyspepsia, that common complaint of

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students: and in the higher institutions of learning, where the course is difficult and protracted, many, after graduation, return home invalids—often only to die.

The products of digestion are taken up by two different sets of vessels. The fatty matters, in the form of an emulsion, go almost directly to the right side of the heart; while the others, before entering the general circulation, pass through the liver. A portion of the refuse is excreted here; the rest, remaining in solution in the blood, is carried to other organs to be gradually eliminated. So that, during digestion, the blood is not only charged with impurities from the alimentary canal, but also with newly or imperfectly formed material.

The brain, then, being deprived of its full blood-supply, and the blood itself being impure and impoverished, it may at once be seen that the mind is not very active after dinner, and by no means fitted for severe study. Hence the lighter subjects—reading, geography, history, writing, drawing, music—should occupy the afternoon session, as these subjects involve chiefly the imitative faculty and the memory. Of these, reading and music —the lightest of all—should precede; dictation and geography may follow. When the programme includes an afternoon recess, history may follow with advantage. The most appropriate time for writing and drawing is from half-past three to four. The muscles of the hand are steady, the pupils are fatigued mentally, and the imitative faculty—the lowest in the scale—is the only one called into play.

Two o'clock may be set down as the most judicious time for the opening of the afternoon session. Half-past one is not quite so good, but will answer very well. To begin at one is a positive detriment. The pupils hurry home, snatch a hasty dinner, and as hurriedly return. Those who dwell at some distance are often late. Some are obliged to attend to household duties, and this also occasions tardiness. Sunlight is cheap and plenty, and the half-hour gained would be more useful if taken at the end of the session. Indeed, two hours' steady work will exhaust the majority of children, and will leave all seriously disinclined to exertion. When school assembles at two, and is dismissed at four, no recess is necessary, if the plan here indicated is followed, for the work is much lighter than during the morning session.

Of late, certain spasmodic efforts have been made to abolish recess, and hold but one long session per day—from nine to one or half-past one; but this is a mistaken notion, founded on lack of knowledge of the effects of long-continued study and the physical needs of the young. It is true that in some of the largest cities this plan is followed in the high-schools, but the cause is local, for the pupils come from long distances—in New York city, for instance, as far as five miles. Besides, in many of these schools the pupils do much of their studying at their homes, and the majority are in the neighbourhood of twenty years of age, so that they are in a better condition to stand the additional strain without injury.

Anything that distracts the pupil's attention from his studies retards his progress, by making less vivid the impressions received by the nerve-cells; for, by concentrating the mental vision upon one point, to the exclusion of others, we see that point more distinctly. All peripheral irritation, therefore, should be removed as far as possible. The distraction of discomfort, particularly of the cutaneous surface, is a serious drawback; comfortable seats—preferably single—high enough to support the lower limbs, and desks of the proper height to rest the arms, are in this way valuable indirect aids to study. But of all peripheral irritation, that produced by cold is perhaps the most distracting. When the temperature of the room falls below 50 degs. Fahr., the next exercise should be dismissal. Between 50 degs. and 70 degs. the temperature may range; but from 60 degs. to 65 degs. is the safest and most comfortable; safest, because the cutaneous surface does not become overheated and congested—liable to be chilled by the lower temperature of the open air—and most comfortable, because neither heat nor cold is perceptible. It is needless to add that every school-room should have a thermometer, which the teacher should frequently consult, and govern himself according to its indications.

For the reasons noted above, children at home should not be allowed to prepare their lessons immediately after supper, or late into the night; for study congests the brain, and, as sleep is produced by the opposite condition, they lie awake and restless until the amount and pressure of blood within the cranium are greatly diminished.

Strange as the assertion may seem, a pupil's diet has much to do with his progress. A liberal supply of non-stimulating food—in other words, bread, milk, vegetables, fruits, and a farinaceous diet principally—is far superior for the healthy growth of bone and nerve and muscle than a regimen into which nitrogenized materials—flesh-meat, eggs, &c.—enter largely. These latter unduly stimulate the nervous system, cause a premature development of the body, and load the blood with impurities, that tax the liver and the excretory organs sorely. In a warm climate, such as ours, the liver, choked with albuminoids, will fail in its function periodically, through sheer fatigue; the bilious matters then circulate throughout the system and stain the complexion; torpor, *malaise*, and headache will result. In this condition, study is a task instead of a pleasure; the mind is weak, and the memory cannot retain imparted knowledge for any great length of time.

In general terms, it may be laid down as a rule, that much effective study must not be expected from a pupil who is overfed, especially in rich and stimulating food. Let it not be understood that flesh-meat should be excluded from the diet of the young. By no means; it is only its excess that is objected to. An overfed pupil is indolent intellectually, not because he may be so inclined willfully, but for the reason that his digestive organs, not his brain and his blood, are charged with effete matter. In figurative phrase, the fire is 'slow,' because the stove is filled with coal and choked with ashes.

To recapitulate:—The more abstruse studies—mathematics, science, rhetoric—should be taken up during the early morning hours. The proper time for the forenoon recess is at half-past ten. The lighter or concrete subjects — reading, history, geography, writing, drawing, music—should occupy the afternoon hours, commencing preferably at two o'clock. When it begins at half-past one, an interval of ten or fifteen minutes is necessary, preferably the quarter of the hour preceding three o'clock.

No outdoor interval should be allowed when the weather is inclement. For the younger pupils, short lessons frequently repeated, exercising chiefly the imitative faculty of the memory, should be the rule in education.

A BOSTON lady attended a funeral in a country church a short time ago, and after the singing of a hymn, which was striking, melodious and appropriate, a rustic male friend who was seated beside her remarked, with an air of intense local pride: "Beautiful hymn, isn't it? The corpse wrote it."—*Boston Budget.*

Popular Science Papers

"Blessings on Science! When the Earth seemed old,
When Faith grew doting, and our reason cold,
'Twas she discovered that the world was young,
And taught a language to its lisping tongue."

—*Charles Mackay.*

GENIUS AND MENTAL DISEASE.

BY WILLIAM G. STEVENSON, M.D.

FOURTH PAPER.

IN trying to establish the kinship between mental greatness and disease, Mr. Sully states, what I do not deny, that "a number of great men have died from disease of the nerve-centres," naming Pascal, Cuvier, Mendelssohn, Mozart, and Heine—none of whom, however, were insane.

That genius should be subject to "all the ills that flesh is heir to," challenges neither surprise nor dissent; but to hold this as evidence in support of the idea that "the extreme mind is near to extreme madness" is, as it seems to me, an erroneous interpretation of physiological and pathological facts. To prove that Pascal died in convulsions from an acute brain trouble, in connection with a disease of bodily organs, and that Mendelssohn and Rousseau died of apoplexy, and Heine of spinal disease, is not proof that there was any essential weakness or disease of nerve-element, but rather is it evidence of disease of blood-vessels through faulty nutrition. When hæmorrhage occurs in the brain, its substance is disorganized, as it might be if any other foreign substance were forced into it, and nervous disturbance very naturally follows; and, possibly, secondary nervous or mental disease, but it is not correct to speak of the primary apoplexy as a disease of the brain, or to infer that, because a person of high mental endowments has thus suffered, therefore, as Lamartine says, "Genius bears within itself a principle of destruction, of death, of madness." Cuvier, after a life of incessant intellectual toil, with mind unclouded, died at the age of sixty-three, from paralysis of the throat and lungs. Kepler, sound in mind, died when sixty years old of fever, which some say caused an abscess in the brain. The cause of Mozart's death is unknown; his sickness was of short duration. He thought himself poisoned, but the facts were hidden in the pauper-grave wherein his body was unkindly thrown. Now, I protest that such cases give no evidence of insane temperament, and in no way illustrate the kinship between mental greatness and disease.

Again, it is said, and often with reason, that this kinship is shown by the suicidal impulse, which "is only another phase of insanity." That suicide or homicide may result, under this impulse, I doubt not, but to make this fact of special value its numerical proportions should at least be such as to make it a factor of constant value. Because Goethe, Chateaubriand, George Sand, and Johnson have said that at times they felt an impulse to commit suicide; because Beethoven, Schumann, and Cowper, who were at times morbid, really made the attempt; and Kleist, Beneke, and Chatterton succeeded in self-destruction—we are not justified in saying that the impulse or the act itself came because genius contains an element of madness. Hundreds who commit suicide every year do not possess genius; why, then, make it the responsible agent for the few.

It is charitable to think that the misdeeds of our friends, or of those whom we admire, are covered by the plea of irresponsibility through insanity. Science, however, deals with facts, not sentiments. That mental and motor impulses often occur which, because they are stronger than volition, regard not the consciousness of right or wrong, there is no doubt; that these impulses are very frequently the product of a morbid mind is also well attested, but the question before us is limited to the relationship which genius bears to suicide, as one expression of madness.

I confess I can see only that relationship which exists in the organic necessities which constitute the foundation of human thought and action, and not the psychological relationship which makes the exaltation of mind the destroyer of its life.

The regularity and constancy of results which spring from the varying conditions of race, climate, and occupations, as well as from the social, political, and moral influences around us, clearly indicate, what statistics prove, that madness is but one of many causes of suicide. Now, since genius is itself exceedingly rare, and its union with insanity still less frequently found, it is evident that suicide, though occasionally committed by those of exalted minds, is altogether too infrequent among them to justify us in claiming it as evidence in behalf of the insanity of genius. Certainly, when we find that Kleist, Beneke, and Chatterton stand almost alone in this list, the support for the assumption is not strong, nor is it enhanced if the quality of genius thus represented is duly estimated.

Those who would make genius dependent upon or associated with a morbid mental state, seek to strengthen their position by citing the names of Burke, Chatham, Linnæus, Moore, Southey, Scott, Swift, and Shelley, as among those whose faculties were impaired by mental disease. I interpret the facts differently.

It is true that Linnæus at the age of sixty failed in memory, and that, when nearly seventy, an attack of apoplexy ruined his mind; that Moore, Southey, and Scott, when the years of their life were nearly numbered, were enfeebled in mind, because in old age the work of repair had failed; while Swift, at threescore years and ten, lost his mental powers as a result of a disease which began long years before, not in the brain, but in the organ of hearing.

Shelley, indeed, was eccentric and given to sleep-walking and hallucinations, and at times he may have confounded the mythical with the real, seeing "forms more real than living man," but I know of no rule of psychology or of medical jurisprudence which will authorize us to say he was insane. His fervour, his reason, and his imagination conspired to lift him into the higher realms of an idealism which was the antithesis of things as commonly seen, and his mind grew and strengthened until, at the age of thirty years, obedient to the "infinite malice of destiny," he died.

Because Lord Chatham suffered at one time from melancholy, the direct result of suppressed gout, it in no way proves that his genius was allied with madness, for the same clinical facts are observed in all orders of mind.

Since, therefore, every degree of mental disorder, from the simplest feeling of depression to the wildest mania, regardless of the quality of mind, may follow from the undue retention in the blood of the waste products of tissue-change, either alone or combined with other morbid bodily conditions, there seems to be but little justification in asserting that "there is no great genius without a mixture of insanity."

A SURGEON'S LIFE.

From the Autobiography of the late Dr. Gross.

I have always held that it is impossible for any man to be a great surgeon if he is destitute, even in an inconsiderable degree, of the finer feelings of our nature. I have often lain awake for hours the night before an important operation, and suffered great mental distress for days after it was over, until I was certain that my patient was out of danger. I do not think it is possible for a criminal to feel much worse the night before his execution than a surgeon when he knows that upon his skill and attention must depend the fate of a valuable citizen, husband, father, mother, or child. Surgery under such circumstances is a terrible taskmaster, feeding like a vulture upon a man's vitals. It is surprising that any surgeon in large practice should ever attain to a respectable old age, so great are the wear and tear of mind and body.

The world has seen many a sad picture. I will draw one of the surgeon. It is midday; the sun is bright and beautiful; all nature is redolent of joy; men and women crowd the street, arrayed in their best, and all apparently is peace and happiness within and without. In a large house, almost overhanging this street so full of life and gaiety, lies upon a couch an emaciated figure, once one of the sweetest and loveliest of her sex, a confiding and affectionate wife and the adored mother of numerous children, the subject of a frightful disease of one of her limbs, or it may be of her jaw, if not of a still more important part of her body. In an adjoining room is the surgeon, with his assistants, spreading out his instruments and getting things in readiness for the impending operation. He assigns to each his appropriate place. One administers chloroform; another takes charge of the limb; one screws down the tourniquet upon the principal artery, and another holds himself in readiness to follow the knife with his sponge. The flaps are soon formed, the bone severed, the vessels tied, and the huge wound approximated. The woman is pale and ghastly, the pulse hardly perceptible, the skin wet with clammy perspiration, the voice husky, the sight indistinct. Someone whispers into the ear of the busy surgeon: "The patient, I fear, is dying." Restoratives are administered, the pulse gradually rises, and after a few hours of hard work and terrible anxiety reaction occurs. The poor woman was only faint from the joint influence of the anæsthetic, shock, and loss of blood. An assistant, a kind of sentinel, is placed as a guard over her, with instructions to watch her with the closest care, and to send word the moment the slightest change for the worse is seen.

The surgeon goes about his business, visits other patients on the way, and at length, long after the usual hour, he sits down, worried and exhausted, to his cold and comfortless meal, with a mouth almost as dry and a voice as husky as his patient's. He eats mechanically, exchanges hardly a word with any member of his family, and sullenly retires to his study to prescribe for his patients—never, during all this time, forgetting the poor mutilated object he left a few hours ago. He is about to lie down to get a moment's repose after the severe toil of the day, when suddenly he hears a loud ring of the bell, and a servant, breathless with excitement, begs his immediate presence at the sick chamber with the exclamation, "They think Mrs. —— is dying." He hurries to the scene with rapid pace and anxious feeling. The stump is of a crimson colour and the patient lies in a profound swoon. An artery has suddenly given way, the exhaustion is extreme, cordials and stimulants are at once brought into requisition, the dressings are removed, and the recusant vessel is secured.

The vital current ebbs and flows, reaction is still more tardy than before, and it is not until a late hour of the night that the surgeon, literally worn out in mind and body, retires to his home in search of repose. Does he sleep? He tries, but he cannot close his eyes. His mind is with his patient; he hears every footstep upon the pavement under his window, and is in momentary expectation of the ringing of the night-bell. He is disturbed by the wildest fancies, he sees the most terrific objects, and, as he rises early in the morning to hasten to his patient's chamber, he feels that he has been cheated of the rest of which he stood so much in need. Is this picture overdrawn? I have sat for it a thousand times, and there is not an educated, conscientious surgeon that will not certify to its accuracy.

Vin Mariani.—Professor Fauvel, of Paris, writes as follows:—"Will you kindly have it announced in your Journal, in justice to myself before the medical profession, that the various notices appearing in journals and circulars quoting my name in connection with coca are entirely false and in every respect a prevarication. The only preparation of coca employed by me with undoubted and uniform success has been the so well known *Vin Mariani*, which, since 1865, I have had occasion to prescribe daily in my *clinique*, as well as in private practice. My opinion of this valuable medicament, together with those of many of my *confrères*, has during many years been frequently made known for the benefit of the profession in various writings, and it is but just to this worthy preparation that it receive all honour due." Vin Mariani is sold by Messrs. Roberts & Co., Chemists, New Bond-street, London, W.

Removing the Ring.—"Will you please saw this ring off my finger?" It was an old woman who made this request of a Broadway jeweller, and as the worker in gold and silver took the wrinkled, though fat and shapely, hand in his it trembled violently, and a tear dropped upon the counter. "Excuse me," continued the old lady, "but it is my wedding ring. I have never had it off since I was married—forty-five years ago. I have refrained from having it cut, hoping that my finger might get thinner, and that I could take it off without breaking it." "And what if I can remove it without cutting?" enquired the jeweller. "But can you?" said she, looking up in a credulous way. "If you can, do it by all means." Then the jeweller took the swollen finger, and wound it round from the top downward in a length of flat rubber braid. The elastic cord exerted its force upon the tissues of the fingers gently and gradually, until the flesh seemed to be pushed down almost to the bone. The old woman's hand was then held above her head for a brief interval. Then the bandage was quickly uncorded and re-wound about the member. This was repeated three times, and finally it was found upon uncovering the finger that it was small enough to admit of the ring being removed with ease. "I have never failed but once," said the jeweller, "and I have removed many rings from fingers even more swollen than yours. Do I charge for it? Oh, yes. I ask the same amount that I would get if the ring were left to be mended after being cut. One dollar. Thank you!" and as he turned to his bench and the old woman left the store, he added: "But after all, she might have done the same thing herself. It's not the work, however, I charge for. It's the 'know how.'"

Public Health

"Health is the first Wealth."—*Emerson.*

SMALL-POX AND VACCINATION AT SHEFFIELD.

AT the present juncture, when the small-pox epidemic rages in Sheffield, the following admirable summary of the value of vaccination, given by the *British Medical Journal*, possesses a high public interest :—

The President of the Local Government Board, when speaking at Sheffield on Monday last, naturally referred to the severe epidemic of small-pox which, for some months past, has prevailed in the town, and has caused considerable alarm in the northern and midland counties. The opponents of vaccination have eagerly embraced the opportunity of endeavouring to create in the public mind a distrust of the efficacy of vaccination, and the bare fact that small-pox has invaded a well-vaccinated town and gained a foothold there has been held to be a sufficient condemnation of the system. Sheffield, in fact, has been held up as an awful example. It is well, therefore, that the responsible minister has had an opportunity of publicly refuting these sophisms, and of testifying to the beneficial effects of vaccination as demonstrated by the Sheffield experiences themselves.

Bearing in mind that the protection afforded by vaccination in infancy is most effective during the early years of life, and that after the age of ten it decreases unless renewed by revaccination, Mr. Ritchie examines the statistics concerning the children under ten years of age. He finds that there are about 100,000 children under that age living in Sheffield; that 95,000 of those children are vaccinated; and that 5,000 are unvaccinated. Out of the 95,000 vaccinated children, there have been 189 attacks and 2 deaths; out of the 5,000 unvaccinated children under ten there have been 172 attacks and 70 deaths. If for a moment it is assumed that all children under ten were vaccinated, there would have been 200 attacks and hardly more than 2 deaths. If all under ten had been unvaccinated, there would have been 3,277 attacks and 1,330 deaths, or exactly 600 times greater mortality.

Here is a reproduction of the metropolitan experience of 1881. In that year there were in London some 916,000 children under the age of ten years, and of these 861,000 were vaccinated and 55,000 were unvaccinated; whilst in that year, amongst the 861,000 vaccinated, there were only 125 deaths, among the 55,000 unvaccinated there were 782 deaths, that is to say, upon equal numbers of the two classes, the mortality from small-pox amongst the unvaccinated was about a hundredfold the mortality from small-pox amongst the vaccinated.

As regards persons above the age of ten, the Sheffield experience also supports the efficacy of vaccination, though not so conclusively as does that of the younger persons, inasmuch as the protective value of primary vaccination diminishes year by year, and re-vaccination has not been the rule. The lesson, therefore, is once more taught by these experiences, that if protection against small-pox in the later years of life is to be secured, re-vaccination must not be delayed beyond the age of ten or twelve years. We are glad that the Government are about to facilitate this early re-vaccination by reducing the minimum age at which the operation can be obtained at the public expense.

Apart from the question of decreasing protection, it is important that the operation should be performed in each case before the actual business of life is entered upon. If it is not so performed it is likely to be indefinitely postponed, if not altogether forgotten, until a scare of small-pox increases the applicants for re-vaccination, strains to the uttermost the resources of the public vaccinators, and increases the risk of the operation being inefficient.

We would venture to impress upon Boards of Guardians the importance of promoting re-vaccination systematically during non-epidemic periods much more than has been the practice hitherto. Practically no efforts have been made in the past in this direction, except in the presence of small-pox, and consequently re-vaccination is by no means as general as the public welfare requires.

DISEASE-PREVENTION IN FRANCE.

THE Minister of Public Instruction of France requested the Academy of Medicine to give its opinion as to the duration of the isolation imposed upon the pupils of the public schools affected with contagious maladies. In answer to this the Section of Hygiene presented the following conclusions :—1. Pupils affected with chicken-pox, small-pox, scarlet fever, measles, or diphtheria, should be rigorously separated from their fellow-pupils. 2. The duration of the isolation should be calculated from the first day of the invasion of the malady. It should be forty days for small-pox, scarlet fever, and diphtheria, and twenty-five days for chicken-pox and mumps. 3. The isolation will cease only when the convalescent shall have taken two or three soapy baths, and have been submitted to as many frictions all over the body, including even the scalp. 4. The clothes which the pupil may have worn at the time that he fell ill should be introduced into a steam stove or submitted to sulphurous fumigations, then thoroughly washed or cleansed. 5. The room occupied by the patient should be thoroughly aerated.

The walls and the furniture should be washed with a solution of corrosive sublimate. The bedding should be disinfected in a vapour stove under pressure; the mattress, previously taken to pieces, should be subjected to the same process. 6. The pupil who may have been affected, outside the school, with one of the contagious maladies enumerated in this report cannot return to his school without furnishing a certificate from a medical man attesting that the pupil has conformed to the requirements enunciated above.

As regards measles, twenty-five days of isolation were considered sufficient, the contagion being much less manifest at the end, during desquamation, than at the outset, during the invasion. As no mention was made of whooping-cough, it was suggested that this malady should be included in the above report, but no member of the Academy could fix the duration of the malady, and consequently the period of isolation necessary. Dr. Legroux, physician of the Trousseau Hospital for Children, read a paper before the Academy giving the report of six cases of whooping-cough which were radically cured, and without relapse, in the space of twenty-seven days, instead of sixty-seven days, which is the average duration of this malady, and ninety days according to Dr. Cadet-Gassicourt.

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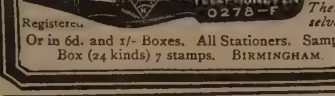

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Jottings from the Journals

"Th' ingredients of health and long life are
Great temperance, open air,
Easy labour, little care."—*Sir Philip Sydney.*

How the Poison of Scarlet Fever is Retained.—For the same reason the poison can be laid up in the homes of infected families in the most singular way. During my early career, I assisted a practitioner at Saffron Walden in Essex for a considerable period. In our union district we had an outbreak of scarlet fever. At a short distance from one of our villages there was situated on a slight eminence a small clump of labourers' cottages, with the thatch peering down on the beds of the sleepers. A man and his wife lived in one of these cottages, with four children. The poison of scarlet fever entered this man's door, and at once struck down one of the flock. I had no time allowed me for the practice of any special remedy; but it seemed to me that I had saved the remaining children by obtaining their removal to the care of a grandparent, who lived at a village a few miles away. Some weeks elapsed, when one of these was allowed to return home. Within twenty-four hours it was seized with the disease, and died with equal rapidity to the first. We were doubly cautious in respect to the return of the other children. Every inch of wall in the cottage was cleansed and lime-washed; every article of clothing and linen was washed, or, if bad, destroyed. Floors were thoroughly scoured, and so long a period as four months was allowed to elapse before any of the living children were brought home. Then one child was allowed to return, a boy nine years of age. He reached his father's cottage early in the morning: he seemed dull the next day; and at midnight in the succeeding twelve hours I was sent for, to find him also the subject of scarlet fever. The disease again assumed the malignant type, and this child died, despite all that could be done. I have always believed that in this instance the thatch was the medium in which the poison was retained.—*Dr. Richardson.*

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Treatment of Inebriety.—Dr. Norman Kerr delivered the second of his course of lectures on Inebriety on January 18th. He said that the predisposing and exciting causes of the disease in each case should be ascertained, and the treatment conducted on thoroughly scientific principles. Proceeding by an unscientific method, numerous alleged "cures" had been oracularly declared to be infallible; yet all these, such as alcoholic frog extract, raw meat and food steeped in alcohol, had been found to be ineffectual. There was no specific. The first indication of sound treatment was the withdrawal of the narcotic, so that the narcotizing process might be terminated. This withdrawal should be immediate with alcohol, chloroform, chloral, and ether, but should be gradual with morphine and opium. The risk and suffering with the last named were as a rule too serious in sudden withholding. Bromides with hyoscyamus were useful in allaying the irritability of the nervous condition. When gastric irritability was present, the bromides could be administered in an effervescent form. Ice, milk, and soda or lime water were of service. The second indication of scientific treatment was the removal of the exciting cause, or its counteraction when it could not be got out of the way. The third indication was the reparation of the physical damage wrought by the disease, the remedying of the pre-inebriate morbid state, and the strengthening of inhibition. Good sound wholesome food was essential to the renovation of healthy tissue. No restricted diet suited all, and a judicious mixture of flesh, fruit, grains, and vegetables was generally the most desirable. Tonics, contra-indicated at an earlier stage of treatment, were useful here. Among the best was unintoxicating "port with bark." The correction of the pre-inebriate morbid state was of importance. Disordered function should be set right, and complicated disease attended to. The inhibitory power should be strengthened by exercise, by bracing hygienic measures, by mental, moral, and religious influences, and by nerve tonics, as strychnine. When seen early, the inebriate could be treated while pursuing his usual calling, but resort was seldom had to medical advice till later. Then it was generally best to advise residence for at least twelve months in a genuine home for inebriates, preferably under the provisions of the Habitual Drunkards Act. When seen at an early stage this disease was as curable as most other diseases.—*British Medical Journal.*

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Boarding-Houses for Infectious Cases. — The subject of infectious disease, no less than of illness which is not communicable, require during convalescence the advantages conferred by a change of air. The difficulty experienced by many in securing this boon is, however, enhanced in such cases by the sanitary necessity which excludes them even during the progress of recovery from most convalescent establishments. They are thus obliged to seek for such accommodation as they can find in apartments at the seaside or elsewhere, and are liable not only to suffer themselves from unforeseen accidents of their new condition, but they may conceivably become the actual sources of danger to healthy persons dwelling under the same roof. This latter point has of late been strongly insisted on in connection with a suggestion that special boarding-houses should be established for the reception of this class of patients. The project is certainly a good one, and the argument in its favour, as we have said, is not an illusory one. It is one, however, which may be pressed too far. We do not deny that occasionally infected persons are allowed to leave home before all chance of their becoming the active foci of disease has passed away. Still we would also remember that the termination of the infectious period can, as a rule, be defined with a fair approach to accuracy, and that the possible transmission of disease in this way is well within the control of a careful practitioner. Every improvement in existing methods of sanitation is most acceptable, and as one such we welcome the proposed extension of the convalescent home system; but, at the same time, we regard it merely as a means of doubly assuring the work of disinfection which should be completed in the sick room.—*Lancet.*

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Wax Matches.—These handy little tapers which are now manufactured in this country to a considerable extent, though large amounts are still imported from abroad, are not made of beeswax, as many suppose, but of ozokerite. This substance, which, besides having many legitimate uses, is employed to a very great extent for adulterating beeswax, is found chiefly near the towns of Boryslaff and Dzwieniasz, in the Austrian province of Galicia. The theory of its formation now generally accepted is, that it is a product of the decomposition of petroleum which has lost its more volatile components, leaving only a waxy, paraffin-like substance. It is found in nests or pockets mixed with more or less earthly impurities, liquid hydrocarbons, resinous oxygenated compounds, and water, and has to be

purified by distillation. The melting point of ozokerite is very high (136 to 208 degrees Fahr.), and the candles made from it are superior to those made of ordinary paraffin, while in the manufacture of wax matches it is superior to the more costly and softer beeswax. In manufacturing wax matches, or "Vestas," as they are called in England, wicks of twenty-five or thirty-five cotton threads are drawn through a boiler containing the molten wax, which quickly cools upon the strands. These are drawn through holes in iron plates to make them of an even size, and after being cut in suitable lengths are tipped with phosporus, like ordinary matches. Wax matches are manufactured chiefly in Manchester, Marseilles, and the North of Italy, Venice and Turin being perhaps the most important centres of manufacture in the latter country. In England they are usually packed in neat little tin boxes, while in France and Italy they are put up in gaudily decorated pasteboard boxes of different patterns.

Our Bookshelf

"Reading maketh a full man."—*Bacon.*

SOLDIERS AND SCIENCE.

On the Growth of the Recruit and Young Soldier, with a View to a Judicious Selection of "Growing Lads" for the Army, and a Regulated System of Training for Recruits. By Sir W. Aitken, M.D. Second Edition. (London: Macmillan & Co.)

Sir William Aitken, as Professor of Pathology in the Army Medical School, and as a distinguished army surgeon, has enjoyed opportunities possessed by scarcely any other authority for acquiring a knowledge of the conditions under which the forces of our army can be most adequately recruited. It is twenty-five years ago since the author published the first edition of this book, and in the light of the many changes which both science and the army have witnessed since that time, he has recast and re-written his volume. That it will prove an essential guide to army medical officers goes without saying. That it may be perused for instruction by general officers and by volunteer officers is also a plain fact; while it may be added that the general reader may find much curious information regarding the body's development within its pages.

The first and primary object of army-recruiting is clearly that of securing the best possible material in the way of healthy men. But a healthy man may be too young for the drill and exercises which form the bulk of the recruit's duties. A healthy frame, under these circumstances, may give way and break down, entailing a serious personal failure to the individual, and a loss of money to the nation. This volume may be described as a highly necessary, elaborate, and cogent argument for the conclusion that, to quote the author's words, "*first, the selection, and second, the physical training* of recruits demand great circumspection and care." He is a powerful opponent of the system which drafts raw lads into the army. It is shown that the bony framework is not fully completed, as regards its development, firmness, and strength, until a relatively late period—say twenty-five years—of life, and that the hard and arduous training of the recruit must exercise a prejudicial effect on his future *physique* and health.

Sir W. Aitken, therefore, inveighs, and wisely too, against "the improper selection of 'growing lads.'" He tells us that "the injudicious exercises and over-exertion of military drills, with an insufficient dietary, tend, in the first instance, to encumber the military hospitals, and if the system does not lead to the premature death of the young soldier, he is sooner or later thrown out upon the civil population with one or more of his vital organs damaged for the remainder of his life." This is a very serious accusation to bring against existent practices in the way of selecting and training recruits. But it derives all its force from the fact that it is made, not by an outsider, but by an authority of the highest standing within the camp. "The service of such young soldiers," the author continues, "who are no sooner out of the hospital than they are in again, can only be regarded as merely *nominal* service, and the 'strength' of an army composed of such material can never constitute a very formidable phalanx." If we consider that under "short service" rules, the evils of which Sir W. Aitken treats, are not likely to be decreased, but, on the contrary, to be exaggerated, we may understand how grave are the questions he raises in the book before us. It is a volume which, in this light, should be in the hands of every member of both Houses of Parliament.

The remedy for the evils detailed by the author is not neglected in his pages. He would have instituted "a period of probation for training." This, in his ideas, is "absolutely necessary, in order to observe whether or not there are any circumstances in the every-day life of the man indicative of any 'constitutional state' under which, for example, 'phthisis' (or consumption) or any other affection of a constitutional kind is likely to develop itself." Such a plan, we cordially agree, would suffice to limit, if not to cure, the evil in question. The Romans recruited their army on such a principle. Vegetius says that a lengthened period of probation for recruits was a statutory law in the Roman army of old. The Roman conscript underwent a probation of four months, in order that his fitness for military service might be duly ascertained. If, at the end of that period, he was found to be physically qualified, he had the military mark indelibly imprinted on his hand. If this care was necessary in the palmy days of Rome, with its stout legions and its splendid *physique*, how much more necessary such a period of probation is in these physically degenerate days, may be adequately imagined.

The author gives very plain reasons for the faith that is in him. He devotes a large portion of his work to the description of the skeleton and its development. Bone by bone, the framework of the body is duly surveyed. It will surprise the general reader to learn that, as we have already remarked, not until the twenty-fifth year of life are the various parts of the skeleton fully and completely ossified. Prior to that age, the ends of many long bones have not been firmly united to their shafts. For example, the *humerus* (or bone of the upper arm) continues to grow in length till the twenty-fifth year of life, and till the twentieth year of life a soft bar, or piece of growing tissue, intervenes between the head of the bone and its shaft. The lower (or elbow) end of the bone is fully united to the shaft at about the eighteenth year. Again, the haunch-bone, single in the adult, is in early life composed of three separate bones. These are not fully united into one bone till the twenty-fifth year of life. The head of the thigh becomes one with the shaft, and its lower end at the knee joins the shaft of the bone, only about the age of twenty.

From the bones, Sir W. Aitken proceeds to discuss the organs of the body in relation to their development.

Thus, the heart grows its greatest from eighteen to twenty-five years of age, and for other organs of the body an analogous rule holds good. The argument for the careful consideration of the recruit in relation to his age and the amount of training he may safely bear, is one supported by every consideration of science and common sense alike. If we strain the body in its early phases and development, we cannot but expect to reap a harvest of ill-health, dependent upon breakdown of the physical powers. This is the warning which Sir W. Aitken would give to the powers that be and to the country at large. It is another example, and a very practical one, of the correlation betwixt the teachings of hygiene and our national welfare. We will do well to take heed of that advice and counsel our author so aptly conveys.

Our Letter-Box

"Conference [maketh] a ready man."—*Bacon.*

NOTICES TO CORRESPONDENTS.

All Communications for the Editorial Department (including Books for Review, Specimens of Sanitary Appliances, &c.), to be addressed to "THE EDITOR OF HEALTH," 2, PATERNOSTER-SQUARE, LONDON, E.C. *Those intended for the Publishing Office to be sent to* MR. A. P. WATT, THE PUBLISHER, *at the same address.*

RULES FOR CORRESPONDENTS.

OWING to the mass of letters which reaches us each week, we respectfully direct the attention of Correspondents, desiring replies in the LETTER-BOX DEPARTMENT of HEALTH, to the following rules:—

1. All questions are answered free of charge in the columns of HEALTH.
2. All letters must be legibly addressed to "The Editor of HEALTH, 2, Paternoster-square, London, E.C.," *and to no other address.*
3. Questions to which answers are desired by post, are so replied to solely at the Editor's discretion. If no answer is sent by post, the query will be replied to in the "Letter-Box" columns of HEALTH. A stamped addressed envelope must accompany all queries to which a private reply is desired.
4. Addresses of physicians and surgeons will, as heretofore, be forwarded FREE to Correspondents on their enclosing a stamped addressed envelope for reply.
5. Correspondents are requested to write on one side of the paper only, and to make their inquiries as brief as may be consistent with clearness.
6. From the necessity of sending HEALTH to press early in the week, no Correspondent can be replied to in the "Letter-Box" columns in the same week in which the inquiry is received. Replies crushed out of any issue will be found in the succeeding number.
7. No Post Cards must be used in sending queries. Violation of this rule deprives the sender of the privilege of a reply.

LETTERS TO THE EDITOR.

SMOKING AND CANCER.

SIR,—The dangerous illness of the Crown Prince of Germany has excited wide-spread sympathy and interest. There has been some warm discussion as to the real nature of the malady, and those who have not paid special attention to the subject may be somewhat puzzled by the apparent inability of the men of science to decide whether the growth in the patient's throat was of a cancerous or only of a warty nature. But it is well known to the students of this painful and mysterious malady that warts are often very difficult to distinguish from cancer, and it is not uncommon for an apparently simple wart to degenerate into a cancer. It is less known that there is an intimate connection between smoking and cancer. What this connection really is, is worth notice. The fact that so many men who are afflicted with cancer of the mouth are smokers has struck many observers, but we must not, therefore, place the two in the relation of cause and effect. The disease we now call cancer was known to Hippocrates and Galen, and was described by them centuries before the introduction of tobacco into Europe. And yet, any examination of the mass of published cases shows that the disease most frequently attacks the drinker and the smoker. According to Billroth's view, there is, in certain constitutions, a tendency towards the growth of malignant tumours. This tendency, apparently, remains quiescent until some local irritation sets its evil activity in motion, and the disease too often rapidly develops and hastens to its fatal and painful end. Mr. B. Jessett, surgeon to the Brompton Cancer Hospital, says: 'A very large majority of men suffering from epithelial cancer of the lips are great smokers, and many will give a distinct history of some injury to the lip being caused either by the jagged end of a pipe scratching it, or the hot end of a pipe burning it, the sore being often instantly irritated by the persistence of the use of the pipe." The tongue is a part of the body very often attacked by cancer. Here there can be no doubt that it is a local irritation which awakens the disease. Thus, carious and broken teeth sometimes scratch the tongue, and, still oftener, the hot pipe or cigar makes a blister where the cancer afterwards develops. "Smoking is another common source of irritation," says Mr. Jessett, "more particularly the short clay pipe, the tip of the tongue being constantly placed against, and playing with, the jagged end of the stem; causing, in the first instance, a blister or an excoriation. Professor Ludwig has shown that carbonate of ammonia, carbolic and acetic acids, which are present in the acrid products of dry distillation of tobacco-smoke, are very injurious. The prolonged action of these substances upon the tongue often gives rise to a kind of chronic superficial glossitis, or icthyosis glossæ; which, as has been shown by Messrs. Clarke and Eve, may be the exciting, as well as the predisposing, cause of epithelioma."

It is a remarkable and instructive fact that epithelial cancer of the tongue is very much commoner in men than in women. In 485 cases described by various authors, 414 of the victims were men and 71 women. Dr. Bouisson was so struck by the greater prevalence of epithelioma amongst tobacco users that he has given the name of *cancer des fumeurs* to the variety which he has investigated with masterly skill. The place first attacked is usually the lower lip at the point where it comes in contact with the pipe or cigar. It is, as we have already said, very much rarer amongst women than amongst men. In one instance a young lady was found to be suffering from cancer of the lower lip, and when, with some hesitation, the question was put, she confessed that she was a secret smoker! M. Bouisson describes 72 cases of smokers' cancer, and from this list he carefully excluded all where there was any doubt as to the agency of tobacco in lighting the embers of the disease into flame. Whilst the lower lip was most frequently attacked, there were also cases in which the upper lip, the gum, the cheeks, the tongue, the tonsils, and the roof of the mouth were infected. His list includes 54 instances of epithelioma and 18 of the graver forms of scirrhus and encephaloid cancer. Mr. John Lizars, the eminent surgeon of Edinburgh, published a number of such cases, and the details of the sufferings of the patients are of the most harrowing kind. Let us refrain from reproducing these, and be content to quote Mr. Jessett once more:—"People suffering from cancerous disease of the tongue suffer excruciating torture, and from the extremely offensive discharge, their existence is intolerable to themselves and a burden to all that are nearest and dearest to them. So much so, that they often pray to have any operation performed, in the hope if no actual good results are obtained, at any rate their suffering may be somewhat relieved. Their general health early fails, their appetite disappears, and from the fœtid breath constantly inhaled, they become more or less poisoned, and die either from exhaustion or septic pneumonia. It is not easy to estimate the natural duration of this disease, as under different circumstances, age, strength, and capacity of endurance must necessarily play an important part as to the time a patient may resist its exhausting influences. From six to eighteen months may, however, be taken as about the usual mean length of time in which a patient may live after the ulcer has once taken a firm hold and is not interfered with by operations. The majority will certainly die in less than a twelvemonth."

Such are the terrible consequences that may result from the indulgence in pipe or cigar. Nor are the chewers or snuffers free from danger. It was noticed long ago that tobacco-chewing occasioned ulcers of the mouth, and Percy suspected, not without reason, that the irritating fluid from the quid passing into the stomach with the saliva, was an exciting cause of internal scirrhus. "In all cases," says Dr. Jessett, "smoking, the use of alcoholic drinks and hot condiments must be strictly prohibited." And yet so strong is the tobacco habit, that we sometimes hear of a man, whose life is a daily torture from cancer, continuing the use of the pipe that has put him in such pain and jeopardy. The case of General Grant is well known. The famous soldier who had rendered such splendid service to his country was a constant smoker, and his habitual use of tobacco was frequently cited as a proof that such indulgence was harmless, if not beneficial. But even his splendid physique and iron constitution was not proof against disease. He died from cancer of the mouth, enduring ex-

cruciating pain with heroic fortitude. But for the tobacco-habit the tendency which may have existed in his blood towards cancer would, in all human probability, have remained a tendency only. It was the cigar that lighted and fed the fierce flame of disease by which his life was consumed. He died a victim of tobacco.

As we write, more favourable reports are current as to the condition of the Crown Prince of Germany, and we sincerely hope that he may escape the fate that has befallen so many smokers. We hope, too, that the great publicity given to his case will be a warning to those who were previously ignorant of the dangers to health and life that lurk within what they have regarded as the "harmless pipe and cigar."—I am, yours, &c., NERVE.

[We give insertion to the above letter chiefly by way of illustrating the *audi alteram partem* principle. In our opinion, the writer dogmatizes too rashly on the whole subject. If smoking were the direct cause of cancer, as he seems to imply, cases of that disease should become indefinitely multiplied. Again, little that is definite is known regarding the real source and origin of cancer. The utmost that can be said is that in a person who exhibits a hereditary or other tendency to cancer, and who thus shows a predisposition to the disease, the irritation of a pipe *might* act as an exciting cause of the ailment. Further than this medical science cannot at present go.—ED. H.]

QUERIES AND ANSWERS.

REPLIES: GENERAL, SANITARY, AND MEDICAL.

[Readers of HEALTH will kindly note that when back numbers of the journal are desired, the letters containing such requests and stamps for the numbers should be addressed to the PUBLISHER of HEALTH, 2, Paternoster-square, London, E.C., and *not to the Editor*.]

A WORKING MAN.—You cannot be cured of such a serious disease save under the supervision of a competent medical man. Appreciate the wisdom of this advice, and place yourself under the care of such a physician at once. The book you name only deals with the results of the disease, not with its cure.

CYLINDER.—All your fears would be most speedily resolved by your seeing a surgeon. By a personal examination of your case, a surgeon will be able to set your mind at rest. There is nothing wrong which care and a little treatment will not cure.

S.—1. All such disease tends to shorten life, but if proper treatment be persevered in, there is no reason why, in your case, any such ill effects should be forthcoming. 2. There should be no difference in the powers in question.

B. VANSITTART.—1. No tonic or any other drug should be taken continuously. Take the tonic at intervals of a week, and gradually increase the intervals before finally discontinuing it, say after four weeks' trial from present date—that is, if it is doing good. 2. The Belts you name are highly efficient appliances for cases like yours, and should certainly be tried. Take also a cold or tepid sponge bath each morning. 3. Simply ordinary debility, doubtless aggravated by the causes you name. The "defect" will be cured by the means we have suggested. In addition, of course, look well to your food-habits, and see that your digestion is improved.

W. GRAHAM.—1. Dumb-bells should suit you. 2. Only a physician after examining you can answer your question. 3. Dr. Peter Hood's book, published by Messrs. Churchill & Co., on "Gout and Rheumatism." 4. We should say not, but consult a solicitor. 5. Any light work not involving exposure to cold. Type-setting requires apprenticeship to a printer.

A MEDICAL STUDENT.—The system requires study and care in acquirement, but we believe it to be one of the best. You had better master it when you have leisure.

H. DAVIES.—Try the effect of taking twenty grains bromide of potash in a wineglass of water at bedtime for a few nights. If not cured, write again.

ELIZA H.—Brush the hair regularly night and morning with a soft brush, and rub in a little of the following to the roots each morning:—Eau de Cologne, two ounces; tincture of cantharides, two drachms; oil of rosemary and oil of lavender, of each, ten drops. Mix. Label: "The Hair Lotion." If not bettered, write again.

PORTOBELLO.—No significance whatever, but natural to some persons. At the most it only indicates a little want of tone; want of sleep would produce it for instance. Try taking fifteen drops Fer Bravais, after your meals, in water.

J. FORD.—Sleep in pyjamas or woollen night suits, made by Messrs. E. Ward & Co., of Bradford, and wear stockings at night in addition. Change your socks frequently, and wear woollen soles in your boots, and wash the feet each morning in tepid water to which carbonate of soda has been added. See that your boots are roomy.

GOSPEL OAK.—Rub into the roots of the hair a little glycerine of borax after washing.

CAMPAGELONIAN.—1. No: beef-tea is not fattening of itself, but may aid fat-increase. 2. The yolk of the egg contains fat, the white does not. Boiled eggs are very nutritious. 3 and 4. Your questions are much too comprehensive to be answered here. Read Dr. King Chambers' book on "Diet" (Smith, Elder & Co.), or procure Dr. Philpott's "Food Tables," published by Messrs. Sampson, Low & Co., 188, Fleet-street, London, E.C. You will find full information therein. A series of articles on "Foods" will be shortly published in our pages. 5. Alcohol tends to assist nutrition if the food is not sufficient: but you would be safer not to take alcohol at all; if needed, take it in the form of a light wine.

C. BEARE.—Send 2½d. to the Publisher for No. 244 HEALTH, and note advice given to "X. Y. Z." therein regarding growth of hair and moustache.

A. Z.—We do not know the apparatus in question. Send stamped addressed envelope and we will answer your inquiry.

CONSTANTINE.—See and follow advice given to "Alfred Hay" in the present number, by way of correcting your digestive irregularities.

QUATERMAIN.—Each of the prescriptions given in the paragraph indicates the amount for one dose. Each is in fact one draught as there stated. If you had read the paragraph attentively you would not have required to ask the question.

JOHN PRINCE.—Avoid salt meats, pastry, cheese, and all indigestible foods, and try a dietary largely vegetable in its character. The itching will be relieved by washing with Bayley's Soap and tepid water, and by using a lotion thereafter consisting of bicarbonate of soda, one drachm; glycerine, an ounce and a half.

L. M.—See advertisement in our pages. If you cannot procure it in your district, write direct to the makers, whose name is appended to the advertisement.

FANNY POWER.—Take, after your meals, one or two Vichy Pastilles, which are pleasant-tasted tablets, and which will serve to correct acidity and flatulence. The Pastilles are advertised in HEALTH.

MATER.—A simple dusting powder, adapted to give relief when applied to chafed parts, is composed of oxide of zinc, one part; powdered starch, two parts.

SORE THROAT.—A safe gargle for relaxed throat is made by adding to two and a half drachms of alum an ounce of honey and a pint of rose water. About a tablespoonful should be taken into the mouth at once, and repeated four times on each occasion; the gargle to be so used thrice daily.

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194, Regent-street, LONDON, W.

VOLENS.—See "Note by the Way" in HEALTH, No. 165, respecting the use of subnitrate of bismuth for excessive perspiration. Try this cure in your case.

A. Y.—The man who wrote you is a notorious quack, and his statements are simply falsehoods in every sense of the term. You are not in bad health, and only require judicious living to make you perfectly well. Read the pamphlet recommended to "Collegian" in the present number of HEALTH for a full description of health-rules applying to cases like yours.

VEO.—A swelling of the nature you describe should be seen by a surgeon. It is probably nothing very serious, but your only safe course is to consult a doctor. There is evidently some ailment which only a personal examination of your case can detect.

E. W. WHITLEY.—Give Dr. Pierre's Tooth Paste and Eau Dentifrice (advertised in our pages) a fair trial. The latter should be used as a mouth-wash, after meals, regularly. Use the Tooth Paste (with a medium brush as to hardness) night and morning, and the tooth-decay will be arrested. For "stopping" partially decayed teeth try Bunter's "Dentine."

JESS.—We advise you to take plenty of outdoor exercise, to avoid excess of fatty foods, and to take a tepid bath each morning, using brisk friction thereafter with a Wilson's Hygienic Towel. You are in error in using warm water to wash the face with; use cold (soft) water. After meals, also, take fifteen drops Fer Bravais in water thrice daily.

BIM.—1. You require a tonic. Try Vin Mariani (Roberts & Co., New Bond-street, London, W.). Take a claret-glass of this tonic after meals, twice daily. 2. About twenty or thirty, we think. 3. No.

J. FOULGER.—Messrs. E. Ward & Co.'s, of Bradford, Sanitary Woollen Underclothing should be regularly worn by you all winter. Take, also, a dessertspoonful of Thomson's Cod Oil Cream after your meals.

HEAD.—You suffer from a want of tone. Read the pamphlet, "A Lecture to Young Men" (post free for 1s. 1d., from Mr. Renshaw, 356, Strand, London, W.C), and take the Syrup of the Hypophosphites as therein advised. If not cured, send description of food-habits, &c., and we will advise again.

A. S. F.—Try the plan of taking a little very light food an hour or so before bedtime—say milk and a biscuit. Avoid tea and coffee, and try Van Houten's Cocoa instead. See that your bedroom is well ventilated. Bad air is a frequent cause of the symptoms of which you complain. If this simple treatment fails, try taking twenty grains bromide of potash at bedtime in a wineglass of water, for a night or two.

A SUBSCRIBER [Will please use a more distinctive name in future].—What you name is commonly caused by liver disturbance. Try the Cascara Cordial and diet as recommended to "Dabchick" in last number. If this does not suffice to cure you, have your eyes examined by an oculist. There may be a want of co-ordination in the eye-muscles.

S. E.—Give a dessertspoonful of Scott's Pure Cod Oil Emulsion after meals, and at night use Stern's "Pumiline" as an inhalation. See notice of "Pumiline" in HEALTH No. 252.

CURLY HEAD.—See advice given to "Martin Box" in HEALTH, No. 253; and, for the eyelashes, rub a little pure Vaseline on the lids at bedtime. Avoid washing the head more frequently than once a week, and use Bayley's Spermaceti Soap (17, Cockspur-street, Pall-Mall, London, S.W.).

T. J. L.—Moderate tricycling will do no harm, and is preferable to bicycling. Avoid all acid foods, and also excess of sweet foods. When your symptoms trouble you, try the plan of drinking a tumbler of hot water, between meals, twice or thrice daily. Take a cold or tepid sponge bath each morning.

HOPEFUL.—Do not wet the head at all in the morning bath. Take it tepid till the warm weather comes in, and then try it cold. Plunge into the bath immediately on rising. Of course, we are presuming you have sufficient reaction and warmth afterwards. Do not stay in the bath longer than suffices for a thorough sponging of the body.

SIMPLETON.—Cases like yours are very common, but are quite amenable to treatment. We recommend you to bathe the parts morning and night in tepid water, or to try a tepid bath each morning, as suggested to "Hopeful" above. This is a tonic and bracing measure. We should also advise you to take a little Boköl to dinner, as your system requires such a nutrient beverage; and, before your meals, take a small glass of Vin Mariani (Roberts & Co., New Bond-street, London, W.). Outdoor exercise is to be taken regularly. If these measures do not improve you, write again in a few weeks' time. Above all, keep your mind easy. Wholesome mental neglect of what is apt to worry you is part of your cure.

A YOUNG WIFE.—What you mention is not at all unusual, and depends simply on excitement following the operation you name. Should the result you apprehend follow (which we think is not likely) no evil effect whatever need be apprehended. If further information is required, send stamped addressed envelope.

TRIBUTE TO AN ENGLISH PHYSICIAN.

THE following letter from an eminent American physician to Dr. William E. Robson, L.R.C.S.I., M.K.Q., C.P.I., of New Egham, Englefield Green, Staines, commending him for the bold stand he has taken regarding a remedy for kidney and liver disorders which is attracting a great deal of attention just at present, contains so many facts of value, and is withal so interesting that we publish it entire:—

"Watertown, N.Y., U.S.A., Jan. 5, 1888.

"William Edward Robson, M.D., &c., &c.,
"New Egham, Englefield Green,
"Staines, England.

"Dear Sir,—I desire to express my appreciation and thanks for your very manly and honest statement in regard to Warner's SAFE Cure, recently published in the *Family Doctor*. I can well understand the position in which you were placed, on account of the prejudice of the medical profession, which is unwilling to acknowledge or endorse true merit in any remedy outside of their own particular ism or code. I am highly gratified to know that there are medical gentlemen in England who, putting conservatism and code aside, have tested Warner's SAFE Cure, and are honest in acknowledging the results obtained from its use. In this country Warner's SAFE Cure has a national reputation, both among professional men and the masses, as a true specific for all diseases of the kidneys, liver, and all affections caused by such diseases. So high an authority as Dr. R. A. Gunn, Dean and Professor of Surgery in the United States Medical College, New York City, in his valuable work on 'Hygiene and Medicine,' endorses and advises, as the result of personal observation, the use of Warner's SAFE Cure for kidney and liver diseases and impure blood. There are thousands of other physicians and surgeons in this country who daily use Warner's SAFE Cure in their practice, knowing full well, as Dr. Gunn says, 'No one school of medicine knows all the truth regarding disease,' and are independent enough to use any remedy that will relieve their patients, without reference to its source. The celebrated Dr. Foster, director of the widely known Clifton Springs Sanitarium, has personally seen the beneficial effects over diseased conditions of Warner's SAFE Cure, and therefore acknowledges its high rank as a kidney medicine. It is used in many of our leading sanitariums in preference to other remedies. The late Dr. Dio Lewis, whose life was devoted to the prevention of disease, and who never used medicines except when actually needed, endorsed in the highest manner Warner's SAFE Cure, in which he said, 'The truth is, the medical profession stands dazed and helpless in the presence of more than one kidney malady, while the testimony of hundreds of intelligent and very reputable gentlemen leaves no room to doubt the efficacy of Warner's SAFE Cure as a true specific for such troubles.' As a result of my own personal experience and observation, extending through many years, and covering a wide range of so-called diseases, I unhesitatingly say that in Warner's SAFE Cure we have a remedy *par excellence* for the treatment of what the medical profession has regarded as incurable, Bright's disease (not organic) of the kidneys, and all other diseases arising from false action of the kidneys, of which you know there are many. As a household remedy for many of the common ailments, and as the most reliable medicine for blood disease, Warner's SAFE Cure has no equal in this or any other country. I trust and hope that the English people will throw aside their conservatism and prejudices, and make use of this great remedy, for I am persuaded it will fully sustain its reputation. "Yours truly,

"S. C. CLARK, M.D."

The remedy mentioned by Mr. Clark, and which is so highly commended by Dr. Robson, can be had of all chemists, at 4s. 6d. per bottle, or direct of H. H. WARNER & Co., 86, Clerkenwell-road, London, E.C.

ORIENT.—You are perfectly right in your surmise. Your friend should not trifle with such an ailment. Send us stamped addressed envelope, and we will forward you address of a reliable surgeon.

H. E. F.—Use Bayley's Spermaceti Soap (17, Cockspur-street, Pall-mall, London, S.W.) and soft water for washing, and dust on the palms Woolley's Sanitary Rose Powder. Take a dessertspoonful of Thomson's Cod Oil Cream (Dublin-street, Edinburgh) after your meals while the cold weather lasts.

QUETTA.—Try the following powder:—Sulphide of lime, twenty-four grains; sugar of milk, half an ounce. Mix. To be kept in a stoppered bottle, and as much as will cover a sixpence to be taken every four hours in a little milk. This is a preventive of boils, &c. For the rest, take plenty of vegetables and little flesh meat.

ROBERT HARE.—We recommend you to try Howie's Filter (advertised in our pages) as a simple and reliable one for purifying drinking water. It is easily cleaned and re-charged.

CECO.—You mean Dahl's Cakes. See advertisement in our pages. They are highly useful for the cure of constipation.

COLLEGIAN.—You are very foolish to allow your mind to run on any such thoughts as those you indicate. Read the pamphlet, "A Lecture to Young Men" (post free for 1s. 1d., from Mr. Renshaw, 356, Strand, London, W.C.), and you will find therein full directions regarding the care of your health.

NUT BROWN.—The formula for powders for relief of acidity and indigestion is as follows:—Carbonate of bismuth, ten grains; wood charcoal, ten grains; bicarbonate of soda, five grains. Mix. One such powder to be taken thrice daily, half an hour before meals, when you are troubled with acidity and dyspepsia.

ALFRED HAY.—Take Cascara Cordial, twenty drops in half a wineglass of water, or so, once or twice daily, an hour before meals; avoid fatty foods, and let your diet consist of Grant's Oat Flour, milk, milk-puddings, white boiled fish, meat (occasionally only, for a time), stewed fruits, stale bread, &c. Try a cold sponge bath each morning, using brisk friction with one of Wilson's bath-towels thereafter. Give up all other medicines, and try these dietetic rules. You have no need to be alarmed in any way, provided you take moderate outdoor exercise, and live a careful life in all other respects.

FRECKLY.—Try a lotion composed of one part Friar's Balsam, added to nine parts rose water, and apply to the skin. If not cured, write again.

ALTHEA.—You may derive much benefit from inhaling the vapour of a pint of hot water to which ten or fifteen drops tincture of iodine have been added. Internally, take fifteen drops Fer Bravais, in water, after your food, thrice daily, as a general tonic. Try also a change of air, if possible.

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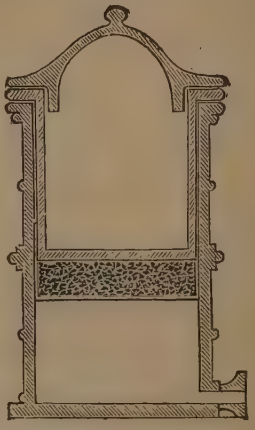

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[The above letter, dated Sept., 1886, is from a medical gentleman in extensive practice in a large city in the North of Ireland.]

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HEALTH

EDITED BY

DR. ANDREW WILSON, F.R.S.E., &c.

LONDON: *FRIDAY, FEBRUARY* 17, 1888.

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Notes by the Way

By the Editor.

"Health is the foundation of all our physical happiness."—*Herder.*

The operation of tracheotomy which was performed last week on the Crown Prince has formed a prominent subject of remark. This procedure, it may be noted, is that of opening into the windpipe, so as to permit of the insertion of a tube through which the patient is able to breathe. In children, in whom it is usually undertaken for the relief of croup and diphtheria, the operation is not unattended with danger, possibly more on account of the general weakness induced by the malady, than because of the proceeding itself. In the adult, it is usually a simple and safe operation, and from the latest accounts to hand, appears to have been followed by no untoward results. The reason why tracheotomy was resorted to was found in the fact that the inflammatory processes in the organ of voice had apparently induced narrowing of the opening of breathing, and had thus necessitated the admission of air by an artificial aperture.

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A Medical Journal, speaking of the operation above noted, says that "it should be distinctly understood that the operation, when done as in the present instance merely as a security against possible accidents in the future, is not only very slightly dangerous in itself, but is one of the most successful in surgery. There is no reason why a man suffering from a disease which obstructs the upper orifice of the windpipe, but does not spread to neighbouring parts, should not, if tracheotomy is performed in time, live out his full natural lease of life. If at any subsequent period the passage becomes clear again, the tube can be removed; if not, it may continue to be worn with comparatively little inconvenience or discomfort. With a properly constructed instrument the patient is not only free from all risk of suffocation, but is able to speak with perfect ease and distinctness, and can discharge the duties of life, and take part in most of its pleasures, without trouble to himself or distress to others."

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Antipyrin is coming to the front as a drug likely to prove of service in many ailments. Surgeon-General Ogilvey, writing to a medical journal says:—"Since first suggesting, in July last, the extended use of antipyrin in sick headaches, I am glad to see it is gaining ground. I would suggest for convenience and portability the use of Burroughs & Wellcome's dainty little tabloids of the pure drug. I find some cases require larger doses than the eight grains (hourly repeated) which I first recommended, and that double that quantity will then be effectual. It causes in some slight constipation, but it is notable that, if it is taken in conjunction with a usual purgative dose, the latter will act in due course during a seizure, while without it almost any article of food or medicine will only make matters worse. Some light food should always be taken as soon as the headache is dissipated.

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For such as are unable to leave home or enjoy travel, to go into crowded rooms, or to venture on certain articles of food and drink, or even medicinal tonics, there is in antipyrin (at no time incompatible) a promise of immunity from the usually dreaded headache which may follow next morning, if not sooner. Its timely exhibition will avert, in most cases effectually, that universal lethargy of function and disturbance of the secretions which are the characteristics of the seizure, and keeps the pylorus relaxed for free communication. Already an established antipyretic in all febrile conditions, it would seem, from some features of its action, to be worthy, also, of extended trial in rheumatic and spasmodic affections, and for the often distressing after-pains of childbed."

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The question whether or not the electric light is a safe light for the eyes and general health together is often asked. A reply to this question has been given by Dr. Zahor, of Prague, who urges the introduction of electric lighting into the public reading-rooms of that city. He states that Dr. Fr. Renk, assistant to Professor Pettenkofer, has had the opportunity of making a series of experiments on the utility of the electric light from the sanitary standpoint, in the "Nationaltheater" of Munich, which is supplied with 1,700 Edison's lights. He has thus been able to prove that the electric light had hardly any influence on the deterioration of the air, whereas the gas-light raised the temperature of the room, deprived the air of its oxygen, and rendered it injurious by increasing the carbonic acid, especially in the higher regions.

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It could also be easily imagined that the elevation of temperature produced by the gaslight, the increase of the carbonic acid, and the diminution of the oxygen in the air reached a much higher degree in confined working-rooms than in a spacious well-ventilated theatre. When the electric light was used, such an increase of the local temperature could never take place as when gaslight was employed, and in the latter case headaches referred to those parts of the head which were directly exposed to the influence of the rays of light supervened. Furthermore, that no carbonic acid was developed, and that no oxygen was consumed by the electric light. Lastly, although the electric light was very powerful, its intensity could be diminished by shades. It becomes evident, therefore, that the more general adoption of the electric light would be very advantageous from the hygienic point of view.

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What are popularly named "stones" in the stomach are in reality concretions which have been formed around some solid nucleus. The bezoar of animals which chew the cud is well known, and in olden days was very highly esteemed as a remedy against poisons and infectious diseases, being even worn as a charm. In man concretions are occasionally found in oatmeal-eating districts, and have sometimes been dignified by the name of "avenoliths." A "stone" was found by Laugier in a human subject, the nucleus or centre of which was formed by a piece of liquorice root. Seven cases of stomach-concretions have been tabulated by one observer, all of which appear to have formed round a nucleus of hair; one of these weighed two kilogrammes.

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A Dutch physician has described a case of a stomach-mass weighing 885 grammes, in which there was no centre. The patient was a middle-aged man, who was so averse to examination and manipulation of all kinds that it was very difficult to form a diagnosis of his disease. He occasionally vomited blood, and gradually became more and more emaciated. A tumour was felt in the region of the stomach, but its nature was not made out until the post-mortem examination. A stone measuring eighteen by eight centimetres nearly filling the cavity of the stomach was then found. There was also a smaller stone situated at the hinder extremity of the organ. These stones were of a brownish colour, and the large one contained several cavities. A number of vegetable cells were found in it, but it was devoid of concentric or other structure. In does not seem, adds the account, to have been fully analysed.

Original Essays

"Life is not to live, but to be well."—*Martial.*

WOMEN AND WORK.

By Honnor Morten.

There has lately been published the "Englishwoman's Handbook" for 1888, which tells a wondrous tale of the progress women have made in securing a right to labour. We venture to think that this increase in the number of women who work may be taken as a safe criterion of the increase of women who enjoy good health; for, though the common objection against labour for women is the weakness of their frames, it is an indisputable fact that it is at the doors of the idlers the doctor's brougham most often stops. Against the illnesses caused amongst workers by over fatigue, exposure to all weathers, &c., must be counted the illnesses amongst idlers, brought on by self-indulgence or morbid imaginings. Of the first class of maladies it can be said that they are generally short and sharp; while the second class, such as hysteria and dyspepsia, are of constant recurrence and lengthy duration. For a woman to be obliged to earn her own living and work regularly every day, is not an unmixed evil; but it is not of such a one we would specially speak. Her path is plain before her; she must work or starve. The great mass of women may be as lazy as they like, and yet have food provided for them. Nay, more than this, they are encouraged in all idle ways, and, having once succumbed to the sloth of society, are bound down by the innumerable Lilliputian ligatures of custom to an existence which knows neither work nor rest.

In the *St. James's Gazette* for January 30th there was an article on working women, which, from the tone of it, might have been written in the eighteenth century, before Carlyle, Mill, or Fawcett had lived. "Learn how to be idle gracefully and agreeably," was the advice it gave to all those who had no need to work; and it impressed on women that they were overcrowding the professions and causing destitution; therefore it was their duty to the State to lead lazy lives. Mistaken notion! that the idleness of the larger half of its members can be for the good of a nation; that competition which heightens the excellence of all products can possibly be well limited! The present steady growth of knowledge would receive a severe check were this advice acted on. There are a million more women than men in England, and they represent a large amount of intellectual force. They do not lead the van; but no general ever won the day without sufficient troops behind him. Every individual is of value to the common good, and every forward step must be taken by a large body if it is to be secured and kept. We certainly thought that since the days of Carlyle, the old doctrine of the duty of graceful idleness would never again be unearthed; that wool-work and piano-playing would never again be regarded as the essence of womanly virtues. Whatever the opinions of

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a few isolated individuals may be, the decision of the majority has long since pronounced that on men and women, rich and poor alike, labour confers both dignity and honour.

The school-girl just free from constant restraint delights to lounge about with a novel, and fall into dawdling ways. This is the time when custom commences to weave the mesh around her victim; and unless the maiden arouses herself, she will be drawn into an unceasing round of calls, charity concerts, letter-writing and dinner-eating, from which it will require great moral strength to break free. Yet there is no curse greater than that which follows the woman of the world—to be doomed to perpetually perform unprofitable labour; to be hurried down the stream of time without any pause for contemplation; and to be ever fretted by the endless trifles of society, till, finally, she fades into death without ever having lived. To those likely to be drawn into this weary vortex, many deterrent considerations can be offered. For, though the path of labour is steep and rough, it is only by climbing it we can gain a clear view of our environment, and breathe the pure uncontaminated air of heaven. All zest lies in contrast; and if a woman would taste the full enjoyment of life, she must first bear her share of the burden of work. Looking at the matter thus in the very lowest light, it is evident that egoistic pleasures must in time satiate the appetite that craved for them, and leave nothing but restless dissatisfaction; while, on the other hand, if half our time be perseveringly devoted towards accomplishing some piece of work, not only will our leisure be a grateful rest and ease, but in time we will taste the most massive and enduring of human joys, that of successful achievement.

For the weakest of women who concentrates all her powers towards a single aim will in the end be able to leave her mark on the world. It is only desultory, ill-directed energy that can land us in the slough of failure. Unluckily, the education of women teaches them to be desultory and superficial, and many of those who courageously break free from the petty routine of society, soon grow weary of their task, and sink back into the "primrose path." It is not to be supposed that every woman can enter a profession or go forth and earn her own living; but in her own home, or around her home, every woman who seeks for it can find worthy work to do. Only the work must be regular daily labour, no playing at the lady bountiful on occasional afternoons, when the mood strikes you. If it is to the social troubles of the day a woman would turn her mind, a course of political economy carried on by correspondence classes, or otherwise, is a good beginning; and then acquaintance should be sought with the methods of the Charity Organization Society. That one of the best labours—that of distributing charity, and of helping all sorts and conditions of men—can be undertaken without forethought or serious study, is one of the great mistakes we are beginning to rectify. Nothing can be worthily done without time and consideration, and every woman should insist on having part of her day to devote to the end she has chosen to aim at, and refuse during her working hours to be drawn aside to frivolities.

Nothing is more pitiful to contemplate than the great mass of women who, having no hope worth fulfilling, no work worth doing, in dreary semi-consciousness fritter their lives away.

What a wondrous enlightenment would take place in these dull minds, if, for a time, they would indulge in high aims, intellectual activity, and earnest thought. The closed eyes would be opened to a new world, higher wisdom and understanding would be bestowed, and the craving for sensual gratifications would be replaced by god-like peace of mind. When we live laborious days, it is easy to scorn delights and accept plain living with our high thinking. Nothing causes character to deteriorate more rapidly than idleness, and those who do not daily advance in moral strength infallibly slip back into slothful degradation, where all their talents lie useless, their gifts rust and their powers rot away. Even the aim of the average Frenchwoman is better than that of our own countrywomen: her highest ambition is "tenir un salon," to do which she must certainly use her natural intuition and artistic sense. But the Englishwoman is usually content to give a gorgeous dinner. If she can keep her guests eating for three hours and supply them with rare forms of food, she feels she has reached success. A guinea to the coal club will embrace all her charitable duties, and the rest of her time and wealth will be spent in seeking those social pleasures which can never yield a noble thought or inspire an unselfish purpose. If this purely animal life would be avoided, the habit of work must be acquired when young, and on the growing brain must be impressed the elements of knowledge that are to raise our daily hopes.

We have each within ourselves a determining power which we call the will; a power constant exercise increases in strength. By its aid we can form our characters, and adopt methodical habits and regular working hours. Our powers are accumulative, every day that we do a piece of steady work we increase our capacity and strength for labour, and the next day we will be able to do more in less time. We will soon begin to glory in our work; to believe that here indeed is the best that this world offers; and that through toil alone can we attain to the highest happiness. If women would only be more thorough in their pursuits, more earnest in their work, more hearty in their play, the poor colourless lives, marred by petty spites and jealousies which so many of them lead, might for ever pass away. Brighter lives and better health await those who will exert themselves to conquer natural sloth and weakness; and strength born of effort will lift them to glorious heights of which they had not otherwise even dreamed.

HEADACHES IN CHILDREN.

By Dr. Andrew Wilson.

(Concluded.)

Dr. Day speaks of headache as one of the first symptoms indicating physical breakdown in children. "As soon as it declares itself, the whole aspect of the child is altered, and he is engrossed with his own sufferings. Melancholy takes the place of cheerfulness. He is kept at work because his ailment is not noticed by his teachers or by his parents. With this state of things, the child soon becomes anæmic, loses his appetite, and the headache, which at first was *occasional*, becomes habitual. Dr. Treichler states that one-third of the pupils at Darmstadt, Paris, and Nuremberg suffer from it. He considers the cause to be over-intellectual exertion entailing work at night, and taking up a variety of subjects. The anæmia produced in these cases sets up disturbance in the ganglion cells of the cortex (or outer layer) of the cerebrum, the quality and quantity of the blood become changed, and the brain loses energy and activity. The mind is consequently enfeebled, and the mental faculties are clouded. When this is once brought

about, children become emotional and excitable; hence the cerebral (or brain) vessels become too suddenly filled with blood to bear it with impunity, and this dilatation of the vessels (local hyperæmia), through vaso-motor (or nervous) disturbance, is another common cause of this form of headache; the vessels of the brain are partially paralysed, and the ganglion cells (or active parts of the brain) too exhausted to grasp new ideas, as Dr. Treichler observes."

One interesting observation, proving that school-headache is frequently caused by congestion or over-fullness of the brain's bloodvessels, is found in the fact that nose-bleedings frequently follow headaches in children, along with muscular twitchings, as the result of over-application to books. In the other or anæmic type of headache, the same observation holds good.

There are also *frontal* (or "forehead") *headaches* to be noted, and *neuralgic* (or "one-sided") headaches to be observed among children. The latter is, however, relatively rarely met with as a pure consequence of over-work at school, but is more common as a cause of the irritation produced by decayed teeth. These latter should always be looked for in children, as not only ordinary neuralgia but earache may follow upon such a deficiency in the teeth.

The frontal headache is thus graphically described by Dr. Day:—"The most frequent form of headache from intellectual work and over-strain is pain across the forehead, generally the whole forehead, and especially along the superciliary ridges. There is a dull oppressive weight; it is felt on waking, and increases during the day. Any reading or intellectual exertion involving close attention, reasoning or reflection, increases the pain, and the child will often be seen leaning his head forwards on his hands, oppressed with the suffering. The forehead, which at first is cold like the extremities, becomes hot after an interval, the temples throb, and the child cannot bear the light. There is tension and fulness in the cerebral vessels. The appetite is generally poor, or is absent altogether; frequently the tongue is furred, and the bowels are torpid. The face at first is pale and drawn, then it may become flushed, and vomiting, which brings relief, may then ensue. I have known such children become very torpid and listless from this form of congestive headache, and avoid their companions. They sleep and dream heavily, often of their tasks; whilst in other cases they become quite changed in character, and are nervous, restless, and irritable. Here the brain is rather *irritable* than congested. Such children are sometimes furious in temper if any opposition is offered to their wishes, or they are low-spirited, and will not utter a word unless spoken to. If a girl, she may be so emotional as to burst into tears on the slightest provocation."

A final form of these ailments in children may be noted in the shape of *ocular* (or sight) *headache*. Here strain on the eyesight induces headache through a very well-known nervous mechanism. The strain on the eyes induces nervous symptoms in the brain, associated, as a high authority tells us, with indigestion, vomiting, biliousness, giddiness, fainting, and general debility.

To the question of *treatment* we naturally turn at the close of our remarks. The first point is recognition of the headache and its cause. Children's headaches should be vigilantly regarded first in the light of their school-work, and secondly, in that of their general health. The foundation of the treatment is absolute rest from all school-work for a time. The child's brain should be allowed to "lie fallow," and its nutrition rigidly attended to. The digestive functions will require to be specially supervised.

As regards the frontal headache, so commonly seen, Dr. Day reminds us that "This character of headache is invariably aggravated by iron and quinine. Bromides should be given three times a day in full doses to lessen excitability and quiet the brain; if there be nausea, let them be administered in effervescence with carbonate of soda and ammonia; keep the bowels gently open. At the onset, it is sometimes advisable to give a full saline purgative, so as to drain the portal circulation and indirectly relieve the head. Above all, bathe the head with a large sponge well soaked in tepid or cold water. Let it be done frequently during the day. I have known this give more relief than any other remedy that could be suggested. It lessens the congestion of the over-filled vessels, promotes their contraction, equalizes the cerebral circulation, and exerts a sedative action on the nervous centres."

The irritable brain, with its headache of slight character, and disturbed sleep is to be treated by sedatives (such as bromide of potash), while cold applications to the head will often promote sleep even when drugs fail. In *neuralgic headache* we must look to the teeth first of all; but our author reminds us that in this case when no cause can be ascertained, the headache is often of hereditary nature. "If it should prove to be of malarial origin, then quinine and arsenic are the remedies to employ; and if there be anæmia—a very frequent cause—then iron is the most reliable drug. It is an excellent plan, in these cases, to give the child one or two tea-spoonfuls of cod-liver oil, after breakfast, before he goes to school, this being one of the best means we possess for strengthening the nervous system. It increases the red corpuscles in the blood, and improves digestion. A small quantity of alcohol, in some shape or form, with the two chief meals of the day, may be necessary. If there are decayed teeth, they must be attended to. Severe supra-orbital (or eye-brow) neuralgia has yielded to the lancing of the second molar tooth."

Last of all, the blessing of sleep for children can never be too thoroughly appreciated as a means of health-preservation. Dr. Day would have children to sleep for "at least nine hours out of the twenty-four;" while children of sensitive temperament should be allowed to repose a longer time still in bed. Home-lessons—happily being lessened or abolished in the better-ordered schools—must be interdicted. "It is better to be healthy than wise," is a maxim parents at least should lay to heart. The occurrence of headaches in children is only Nature's method of warning us that parental wisdom at least must be exerted to protect the "bairns" from the effects of over-strain, which are neither small nor easily borne, and which often persist when left unheeded, onwards into their life as adult men and women.

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Personal Health

"Be timely wise;
With health all taste of pleasure flies."—*Gay.*

STUDY AND HEALTH.

By P. J. HIGGINS, M.D.

THE ultimate element by means of which those processes that constitute the mind are carried on, is the microscopic cell of the gray matter of the brain. These gray nerve-cells, with the delicate tissue in which they are imbedded, form a layer, from one-sixth to one-twelfth of an inch in thickness, on the surface of the brain. This area would be small, were it not disposed in folds or convolutions which greatly increase its extent. It is upon the number and quality of these nerve-cells, and the systematic exercise of their function, rather than upon mere size or weight of brain, that the mental capacity of the individual depends.

The activity of the nerve-cells of the brain, in other words, depends partly upon their inherent vitality or vigour of constitution, and partly upon the quantity and quality of their blood-supply. They may be stimulated into unwonted activity by an effort of the will or the spur of excited consciousness; but even in these cases, should the strain last any length of time, the blood-supply is quickly and largely increased.

Sceptics may cavil, but the solid fact remains that strength of intellect, like that of muscle, is frequently inherited. Capacities differ from the beginning. For this reason, children cannot be expected to make equal progress under any system of teaching, any more than horses upon a race-course. But, by persistent and judicious training, the strength, speed, and endurance of all may be increased through a steady and gradual development.

In order that the teacher may utilize his efforts to the best advantage, he should understand the laws of the mind's development, and the influences that modify and regulate its activity. Mental philosophy deals with the former—to explain some of the latter is the object of this paper.

The brain-substance may be touched, and even cut, with little or no consciousness of sensation; yet the gray nerve-matter is very delicate in construction, and exquisitely sensitive to changes in its blood-supply. Like other organs, it is exhausted by continued activity, and needs rest in order to recuperate its vitality. All tissues wear more or less by work; that is, molecules of their cell-substance die and become foreign matter, which must be cast off and replaced by new material. This new material is absorbed by the cells from the blood, through the thin walls of the minute blood-vessels in their vicinity. Through the walls of the same vessels the cast-off matters pass in the opposite direction into the circulation and are washed away by its current. While the tissue is hard at work, the process of disintegration is at a maximum, and that of repair at the opposite extreme—consequently the waste is produced more rapidly than it can be carried away, and accumulates. As ashes in a stove interfere with combustion, it impedes the current of thought, and lessens its intensity. But, during repose, the opposite conditions obtain—repair is at its maximum, and waste almost or entirely suspended. The blood has been busy all night ridding itself and the tissues of all impurities, and is richly charged with oxygen. The brain, and consequently the mind, is fresh and vigorous after the night's repose; the damages have been all repaired, and the *débris* cleared away. It is a matter even of common observation that at no other time is the mind so sharp, clear, and strong, as in the morning.

Concrete ideas tax the mind but lightly. The more abstract ideas become, the more difficult is their comprehension, and the greater the nervous strain involved in their contemplation. For this reason, the abstruse studies should be taken up during the forenoon session, as the faculties of the mind are then in the most favourable condition to grapple with their difficulties.

Of all school-studies, mathematics requires the strongest grasp of mind, and the closest exercise of the reasoning powers and the judgment. In abstruseness and difficulty of comprehension, geometry, algebra, and arithmetic, rank in the order enumerated. Rhetoric, including grammar and composition, comes next. In every school and college, therefore, these subjects should be taken up during the morning session.

The mind learns by means of impressions made upon the gray nerve-cells, through the senses, of which sight is the most vivid and durable in its effects. Hearing ranks next, but its impressions are less vivid and more fleeting. Further, they are recalled to the memory less readily and distinctly. We all remember what we see longer than what we hear. Hence the most reliance should be placed upon the eye as an avenue of instruction, and the teacher should make use of it whenever practicable. When an impression is made upon a nerve-cell, it is said to retain it "in potency"—that is, it is capable of renewing it by an exercise of the memory. Now, the clearness and permanence of a mental impression depend—(*a*) upon its vividness; (*b*) upon the frequency of its repetition: and (*c*) upon the inherent vigour of the nerve-cell.

To obtain vividness of impression, the teacher's language should be clear and simple; his descriptions of processes and objects sharp and vivid; he must present the same ideas again and again, in order to fix them permanently in the memory. The inherent vigour of the mind can be strengthened by systematic exercise, just as the muscles of a blacksmith's arm become strong and brawny by years of daily toil at the clinking anvil.

Throughout animated nature, a period of repose succeeds one of activity, both recurring in regular alternation. The vegetable world grows and blooms; then, for a season, all the vital processes stand still. Work brings weariness, which rest must dissipate. So is it with the tissues of the body; and the younger and more delicately organized they are, the sooner does toil exhaust them. Brain-matter is the most delicate of all our tissues, and nearly one-third of the pure blood thrown out by the heart at each contraction goes to supply it. A tissue, when at work, has its blood-supply largely increased. When the mind is actively engaged in study, the circulation in the brain is full and active, the temperature is raised, even the face is flushed; and the more difficult the study, the more these effects are intensified. After a time, the brain becomes so engorged with blood that its activity is depressed and its energies begin to flag. The younger a pupil is the sooner does his mind grow tired. Between the ages of six and seven, the lessons should not exceed ten minutes' duration, as young children are unable to keep their attention fixed upon one subject for a greater length of time. It may be laid down as a safe rule that close mental application for an hour and a half will tire out the majority of pupils and leave them unfit and indisposed to proceed further without a relaxation of at least ten or fifteen minutes.

Here the forenoon recess is indicated—not, as some imagine, simply to kill time, but as a positive physical necessity, not for the pupil alone, but also for the teacher. The worry and mental strain of governing a room full of nervous, restless children, and teaching at the same time, no one can fully realize without actual experience.

How should recess be spent by the pupil? To reply to this, his physical condition must be considered. As the blood is contained in a series of closed vessels, it is evident that, if the circulation be increased in one portion, it is correspondingly diminished in another. When the brain is engorged, some other portion of the economy must be under-supplied. By a wise provision of Nature, the surplus is drawn from the tissue that is least active—in this case, from the muscular system. The indication is to relieve the congested brain, and this is best met by muscular exercise, as a tissue in action has its blood-supply largely increased. The muscular system is of considerable extent, and the exercise that brings the most muscle into action is the most beneficial.

Therefore, during recess, nothing can take the place of active exercise in the open air.

But if the temperature is very low, recess had better be taken indoors, for the intense cold exhausts the vitality by drawing largely upon the heat-supply. By constringing the cutaneous vessels, it congests the internal organs and weakens the heart, while it requires some time to restore the equilibrium of the circulation. In rainy weather the result is still more detrimental. In a climate like ours, exposure to rain is at all times fraught with danger to health, and particularly when one sits still in wet or damp garments for any great length of time. No recess out-doors, on a bitterly cold or rainy day, should be the rule, and gymnastic exercises, calisthenics, motion-songs, &c., should take its place. Every grammar-school should have one room fitted up as a gymnasium. There is a certain amount of nerve energy that is accustomed to find outlet in the muscles, and, if unduly repressed, it will often break through the strictest discipline and cause the teacher much annoyance. It must not be forgotten that muscles were not created to be kept still during waking hours, and, when kept at rest an hour or two, a surplus of energy accumulates, which recess gets rid of legitimately. It also serves another purpose admirably. Of all sedatives of the nervous system, muscular exercise is the most efficient, because physiological. It quickens the circulation, and stimulates the heart and all the vegetative functions.

PHENOL AND SCARLET FEVER.—The medical officer of health of Bacup, Mr. John Brown, bears testimony to the prophylactic properties of carbolized oil in early and continued inunction in cases of scarlatina. The carbolized oil, which is only for *external use*, contains three per cent. of pure carbolic acid, and as soon as the rash is out this is applied over the whole body, except the face, for which pure olive oil is used. The inunction is repeated twice a day, with a warm bath every night, and the treatment is continued till the sixth week, by which time it may be expected that the desquamation of the skin is complete, and the patient, therefore, no longer capable of conveying the infection. Dr. Richard Jeffreys, of Chesterfield, successfully employs a warm two per cent. aqueous solution of carbolic acid, with which the patients' bodies are sponged over every night, and every morning they are anointed with pure vaseline containing two per cent. of phenol.

The Family Circle

"The child is father of the man."—*Wordsworth.*
"In bringing up a child, think of its old age."—*Joubert.*

FEEDING IN THE SICK ROOM.

BY A PHYSICIAN.

"EVERY man is a rascal when he is sick," said Dr. Johnson. Perhaps it would be truer to say—every man is a dyspeptic when he is sick. Said Voltaire of President Henault, a man of fortune highly endowed by nature: "It matters nothing—he can't digest." We read of Tantalus in water up to his chin, ever trying to quench his increasing thirst from the surrounding floods, which recede with every effort the sufferer makes. Such, in a measure, is the experience of the dyspeptic. "Give me an alms," said Lazarus to Dives, "I am so hungry!"—"Hungry!" exclaimed Dives, "How I envy you!"

A dyspeptic may be said to be a man who suffers for want of food, and then suffers because he has had it. The very sick are often the same. I have seen the harried patient put to sleep with a mouthful of proper food, and I have seen the fever raised at once by what was unsuitable. Many a patient, convalescent from typhoid fever, has taken a hearty meal, and put his head on his pillow never to raise it again. A poor woman's life had been in the balance with peritonitis for a week; she was on the mend; her husband gave her some champagne and gruel, and she forthwith became worse, and died in forty-eight hours. How a full meal belabours a diseased and weakened heart. How it "fires up" a tender liver or kidney. If you will let me feed a man as I like, I will produce suppuration in the best cared-for wound, I will prevent an ulcer from healing, and drive an inflamed joint to destruction.

Physiologists show us that our food is poison, and that the liver is a dam which prevents the poison being thrown upon the system too fast. If the meat taken at an ordinary meal were to be digested outside of the body and thrown into the veins, it would prove fatal. Different animals are affected differently by different foods. A horse, for example, "has been known to eat eight pounds of belladonna leaves (deadly nightshade) with impunity; blackbirds feed freely upon the berries; and fifteen grains of its active principle are required to poison a rabbit, while a small dose would poison a man." To young infants, few things are more injurious than starchy food; to them, and to invalids generally, plain cow's milk (which curdles) should not be given.

We are led, then, to the importance of care in feeding in the sick room, and its importance is well laid down by King Chambers in his "Manual of Diet," who, after referring to acute disease, and particularly fever, says: "When life seems passing away under their eyes, the friends will often shrink from tormenting (as it seems to them) the sick man with food. Let them not despair; many a one has recovered after the doctor has taken his leave with a sad shake of the head, and without making a fresh appointment. And also let them be stimulated by this fact, namely, that the pains of death are aggravated, if not mainly caused, by the failure of nutrition. Even when apparently insensible, the dying suffer much increased distress from want of food, though they cannot express their sufferings." Food is ofttimes a better medicine than drugs.

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milk, gruels, and meat-soups. There are drawbacks to them all which should not be overlooked. Cow's milk, as everyone knows, curdles in the stomach, and in diarrhœa, dysentry, typhoid fever, peritonitis, infantile and dyspeptic conditions, may do irreparable harm. The danger is readily overcome, all that is necessary being to add to each pint a Fairchild Zymine Peptonising Powder, which predigests it. The trouble with gruels is that the stomach cannot digest them, as they are starchy, but by adding a teaspoonful or two of the Kepler Malt Extract to each cupful, the starch will be rendered soluble in a moment.

As to beef-teas, in making them, the heat coagulates the nutritious ingredients of the meat, and only the stimulant principles are administered. Zymine should always be used in making beef-tea for invalids, as it digests out the insoluble but nutritious albumen.

THE GROWTH OF CHILDREN.

THE systematic measurement of the several parts of the human body, together with the testing of their functions, has developed into the science of anthropometry. The plan of establishing an anthropometrical laboratory, where, for a small fee, any one can have himself weighed, measured, and his powers tested, which Mr. Galton has so often and so ably advocated, seems about to be realized. The results of such measurements, when widely taken and ably compared, will be to practical biology and hygiene what statistics, in the present use of the term, are to economical science—the experimental basis of their practical application. As in the latter, so in the former, the stating of these results in accurate form at once opens up a number of questions never before considered, and at the same time helps to solve those that have been brought to notice. In this department of study no field has been cultivated with so much zeal as the study of the growth of children, mainly because this is a field where the practical lessons can be most effective. In a recent number of a German scientific journal, Professor Gad, of the University of Berlin, sums up the recent studies upon the growth of children, and thus makes accessible some very interesting facts.

About one-fourth of a human life is spent in the period of growth; and this implies not merely addition of material, but assimilation, re-formation. It involves, too, in some cases, the enlargement and change of form of elementary cells, but in most cases the formation of new cells by cell-division. We know more about the growth of the skeleton than about that of the soft parts of the body; but a more detailed knowledge of the growth of its several parts is highly desirable. The height and weight of the entire body are the most readily observed, and about them the information is most accurate. The female child weighs, on the average, 3, and the male 3·5 kilograms. At the fifteenth year the weight has become twelve times this amount. The greatest changes occur in the first year. At the end of the second year, the body weighs three and a half times its original weight, and about one fifth more than at the end of the first year. In the third year it increases by one-tenth its weight; and from then on, the increase is tolerably constant up to the eighth year for girls, and the tenth year for boys, at about 1,500—1,800 grams per annum. The increase in height takes a parallel course.

The greatest changes occur in the suckling. At birth the height is 50 centimètres, which is about one-third that of the adult. At twelve months it has increased by 20 centimètres (40 per cent), more of this increase going to the lower than to the upper half of the body. In the second year the increase is 10 centimètres (15 per cent.);* in the third, 7 centimètres (8 per cent.); and from then on, it is about 5 centimètres annually. At five years the height has doubled, and at fifteen tripled itself. This for boys. Girls are smaller, and reach their maximum earlier. The maximum height of army recruits falls between the twentieth and the twenty-second year, and is 170·5 centimètres. If in growing the body retained the proportions of the several parts, the weight of the adult would be twenty-seven times that of the new-born child, inasmuch as the adult is three times as tall as the babe, and the volume is as the cube of the height. As it is, the adult weight is only twelve times the original, and this difference shows how much more the growth is in height than in any other direction.

The usual method of obtaining these average results is to measure groups of children of certain ages, and take the mean result. Another method is to observe the same children, and measure and weigh them for many years. The latter is the more troublesome, but the inference from it is more immediate; though the former, when based on sufficiently large numbers, gives reliable results. Dr. Landsberger has been measuring a large number of children in Posen, Germany, and always the same children, since 1880—a period of six years. The measurements have been made always between the 5th and the 15th of May, at the same time of day, in the same place, and with the same instruments. The average period covered is from the sixth to the thirteenth year. One curious result is, that the social factor as between the rich and the poor is a much more important one than the racial as between Poles and Germans. The rich children come to school taller and heavier than the poor ones, though their increase after getting to school is not more rapid. This long-lasting effect of early care is much more conclusively shown by the figures of another observer, Russow, who has tabulated the heights and weights of children from their second to their eighth year, distinguishing between those that were naturally suckled and those that were artificially reared, and throughout all this period shows a balance in height and weight in favour of the former.

Perhaps the most original investigation in this field is that of Dr. Malling-Hansen, director of the institute for the deaf and dumb at Copenhagen; the measurements being made on the children of that institution ranging from nine to fifteen years of age. The weights of these children show three marked periods in each year: there is a period of maximum growth in weight extending from August to the middle of December, a period of mean growth in weight from then to the first of April, followed by a period of minimum growth in weight back to August again. During the period of maximum growth in weight, the daily increase is three times as great as during the period of mean growth; and almost all that is gained in the latter period is lost in the period of minimum growth. With regard to height, these periods are equally evident, though not coincident. In Copenhagen the period of minimum growth in height is from August to the end of November; the mean period, from then to March; and the maximum period, from March to August. In the maximum period the daily increase in height is two and a half times as great as in the mean

* The reader will bear in mind that a *gramme* equals 15·432 grains English weight: and a *kilogramme* 2·204 lbs. avoirdupois. The *centimètre* is 0·39370 of an English inch: the *mètre* being 39 inches and a little over. The English ounce (avoirdupois) equals 29·439 grammes, while the English inch equals 2·539 centimètres.

period, and in the latter, two and a half times as great as in the minimum period.

The period, then, at which the general increase of the body is going on is from the end of March to December; and within this period there is a period of maximum increase in height and a period of maximum increase in weight. During the period of most rapid increase in weight, the increase in height is the slowest of any in that period, the times of mean growth of height and weight about coincide, and the period of maximum growth in height is a period of comparative rest for the weight. The height-periods begin and end about fifteen days before the weight-periods. The height first has a period of minimum growth, then a period of mean growth, then its maximum growth, and then suddenly falls back again to the minimum rate of growth. The weight, however, begins with a minimum rate of growth, passes at once to its maximum, and then slowly falls through the period of mean growth back to the minimum again.

The growth in weight varies more than the growth in height. An increase of 1 centimètre of height corresponds to 2·84 kilograms during the period of maximum growth in weight, but only to ·48 of a kilogram in the period of mean or minimum growth. The increase of weight in the maximum period is essentially a growth in stoutness, and the loss of weight during the period of minimum growth is a decrease in stoutness. In the period of maximum increase in height the increase in stoutness is at a minimum, and during the period of least increase in height is at a maximum. A practical lesson to be derived from the knowledge of these periods is to have as large as possible a share of the period of general greatest growth fall into the vacation time; for then the body has less strain upon it, and is in general in the best condition for growing. The Swedes and South Germans are accordingly right in giving their children two or two and a half months vacation, from July to the middle of September, thus including a good share of the greatest growth period.

Dr. Mallen-Hansen has also attempted to make out shorter periods of twenty-five and seventy-five days of variations in growth, which he regards as due to the changes in the climatic conditions, but this is not as yet securely established. His study of the height reveals some very interesting points. It is well known that we are longer when we lie down than when we stand up, and this difference may be as much as a centimètre. So, too, after a long walk, when the weight of the body has compressed all those parts that furnish room for contraction, the height is smaller. Twenty-two boys, thirteen to sixteen years old, were measured at different times of day. During the hours of leisure, from 6 to 8 a.m., a boy lost, on the average, 4 millimètres in height; while resting on the school-bench, from 8 to 9 o'clock, he gained ·3 of a millimètre; during the instruction, from 9 to 10, he loses 1 millimètre; during the recess, from 10 to 11, the loss in height was 3 millimètres for each boy; from 11 to 12, during school hours, the body expands by 2 millimètres, but in the next hour in school loses ·4 of a millimètre; in the leisure time, from 1 to 5 o'clock, the body loses 3 millimètres. In general, from 6 a.m. to 5 p.m. there is a loss of 9 millimètres; from 5 to 9 p.m. there are variations; and from 9 p.m. to 6 a.m. there is a gain of 9 millimetres.

These measurements were taken during the winter months. The daily variations in weight were also observed. From the end of the chief meal, at 2 p.m., until 9 o clock, each boy loses ·13 of a kilogram and from 9 p.m. to 6 a.m. there was a loss of ·57 of a kilogram: of this, ·28 of a kilogram was due to perspiration and exhalations, and the rest to excretions. From 6 a.m. to 1 p.m. there was a gain of ·11 of a kilogram, and dinner added ·59 of a kilogram. It is very much to be hoped that the custom of taking a variety of this kind of measurements will become widespread, and systematic attempts be made to extend and collect such observations. —*Science.*

VALUE OF EGGS FOR FOOD.

EVERY element, a writer says, that is necessary to the support of man is contained within the limits of an egg shell, in the best proportions and in the most palatable form. Plain boiled, they are wholesome. The masters of French cookery, however, affirm that it is easy to dress them in more than 500 different ways, each method not only economical, but salutary in the highest degree. No honest appetite ever yet rejected an egg in some guise, It is nutriment in the most portable form and in the most concentrated shape. Whole nations of mankind rarely touch any other animal food. Kings eat them plain as readily as do the humble tradesmen. After the victory of Muhldorf, when the Kaiser Ludwig sat at a meal with his burggrafs and great captains, he determined on a piece of luxury—"one egg to every man," and two to the excellently valiant Schwepperman." Far more than fish—for it is watery diet—eggs are the scholar's fare. They contain phosphorus, which is brain food, and sulphur, which performs a variety of functions in the economy. And they are the best of nutriment for children, for, in a compact form, they contain everything that is necessary for the growth of the youthful frame. Eggs are, however, not only food—they are medicine also. The white is the most efficacious of remedies for burns, and the oil extractable from the yelk is regarded by the Russians as an almost miraculous salve for cuts, bruises, and scratches.

A raw egg, if swallowed in time, will effectually detach a fish bone fastened in the throat, and the white of two eggs will render the deadly corrosive sublimate as harmless as a dose of calomel. They strengthen the consumptive, invigorate the feeble, and render the most susceptible all but proof against jaundice in its more malignant phase. They can also be drunk in the shape of that "egg-flip" which sustains the oratorical efforts of modern statesmen. The merits of eggs do not even end here. In France alone the wine clarifiers use more than 80,000,000 a year, and the Alsatians consume fully 38,000,000 in calico printing and for dressing the leather used in making the finest of French kid gloves. Finally, not to mention various other employments for eggs in the arts, they may, of course, almost without trouble on the farmer's part, be converted into fowls, which, in any shape, are profitable to the seller and welcome to the buyer. Even egg-shells are valuable, for allopath and homeopath alike agree in regarding them as the purest of carbonate of lime.

PREVENTION OF DIPHTHERIA.—Dumas (*Bul. Gener. de Therap.*) urges the use of preventative measures in children exposed to the dangers of a diphtheritic infection. The throat is to be inspected every day carefully, and all local deposits are to be immediately destroyed. Internally, he gives iodine in the following combination:—Tr. iodine, eight drops; iodide of potass, one and a half grains; simple syrup, five drachms; water, two and a half ounces. To be taken every twenty-four hours. (The quantity seems large for a child.)

Public Health

"Health is the first Wealth."—*Emerson.*

THE FRUIT-SUPPLY OF SMALL TOWNS.

By Dr. A. Crespi.

It quite makes the mouth of a resident in a small country town water when he chances to walk down the streets of a great city in the fruit season. Very likely he has read that the market is so glutted that it does not pay to gather fruit and to send it by rail to the nearest great town. He has heard that plums are rotting, and apples and pears dropping unheeded from the trees, and that the wholesale price is less than it costs to gather and pack the fruit. But unless he chances to be living in the wonderful place where fruit is so abundant, and has a large garden of his own, and that few residents of small means have in country towns, his experience is sadly different. There is, perhaps, no pretence at a market in his neighbourhood, and when he wants fruit he may have much difficulty in hearing of anyone who has some to dispose of, and when he does alight on such a person he is startled to find that the prices he has to pay are very much higher than the newspaper accounts have led him to expect rule the market.

Last year, on the 28th of August, the present writer found himself in Birmingham: every little greengrocer's shop was full of large egg plums, and he saw good fruit marked at two pounds for three halfpence, or one penny a pound. Later in the day he was at Cheltenham, which is near a splendid fruit country, though not itself well supplied with cheap fruit. There the same kind of plums was twopence halfpenny the pound; and in the evening, when he reached Wimborne, a charming and rapidly growing little town in the loveliest part of Dorset, surrounded by pleasant country, and blest with a climate that for warmth and brightness surpasses anything known in the Midlands, egg plums were actually sixpence a dozen, and there were not many of them even at that price. A few days later, a farmer's wife refused to take eightpence a dozen for plums, asserting that at that price it did not pay her to grow them. At Wimborne, at that very time, small, black, astringent plums, which in the markets of Birmingham and Gloucester no one would have looked at, were being sold, when, that is, any were to be got, at threepence and fourpence the pound. This experience was not an exceptional one; and the present writer had in other years brought large hampers of plums from Birmingham, and found on getting to Wimborne that he had not wasted his labour and money.

Now how is this? Surely in these days of agricultural depression and low prices fruit ought to be plentiful and cheap in the small country towns, which, in the aggregate, contain so large a proportion of the total population of the kingdom. Why, when complaints are loud that fruit is over-abundant and not worth gathering, should three-quarters of the people of England hardly see any at all, or only get it at prohibitive prices?

The explanation is simple enough. In the first place, in many warm, sheltered, favoured country districts very little fruit is grown; in the second, there are no conveniences for distributing it—in other words, for reaching the consumer. The latter has either to write to a farmer, enquiring if he will kindly sell some fruit when it suits his convenience, or he has to go a voyage of discovery finding out who has fruit and when it is likely to be ready; or the seller has to call at house after house, losing much time, and perhaps, after all, not succeeding in selling her produce. In short, the facilities for bringing consumer and seller together are the rudest and most imperfect conceivable. Fruit, therefore, is little grown, and this leads to a scarcity and a correspondingly high scale of charges, that, in their turn, still further diminish the demand. We need hardly remind the reader that in towns like Dorchester, Tewkesbury, and Ledbury, there is practically no supply from outside; no trains laden with fruit and vegetables come from distant places; no wholesale dealers receive tons of vegetable produce several times a week; such places are self-contained, and the consumer finds, to his cost, as we have often done, that he could only buy with difficulty and on rare occasions, while his friends in great towns are, perhaps, writing and congratulating him on the abundance of fruit in the country, and on his good fortune in being able to buy good, fresh fruit so cheap, when, perhaps, poor fellow! he has hardly seen any fruit at all, and that, it may be, only in the jealously-guarded garden of some richer friend.

The excuse often heard in the country, that it does not pay to grow fruit, seems, at first sight, plausible enough, but is really preposterous. Land is now so cheap that a piece of ground on which a couple of hundred good-sized trees would grow would hardly cost a pound a year in rent; and, as fruit-trees get very little attention, although, undoubtedly, they do better when they are looked after a little, a fruit-orchard, after the prime cost of planting it and bringing it into bearing condition had been met, is a very small tax on the owner. We doubt whether the fruit-grower would have cause to complain if he could, in an abundant year, get sixpence per dozen pounds for plums, and apples ought to be still cheaper.

One expedient that would in part meet the difficulty would be building cheap market-houses in the many little towns that at present have nothing of the kind; then, on given days, the country-women would come in, and the residents would know where to find them, and in this way, in time, a large and constant supply of cheap fruit would be obtainable, and an impetus to growing fruit would be given that would be most beneficial to the country people. Another way, of course, would be getting fruit direct from the wholesale growers and large dealers; but, apart from the difficulty of finding out their addresses, it is a curious fact that the prices charged are usually far in excess of those detaining in the retail shops of the large towns, and when the cost of carriage—often a very heavy item—and the price of the

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"Isabella Thwaites."

package or basket have been added, the small country town resident finds that his fruit is not cheap, and not always particularly good and fresh.

An instance in point is that of a Dorset rector, living six miles from an important junction. This gentleman could not get fruit in his own neighbourhood, and, knowing that fruit was cheap in the large towns, he looked about for any addresses of fruit-dealers he could find. At last he heard of one at Pershore, in Worcestershire, and accordingly he wrote for a hamper of plums, which were to travel to Wimborne in the cheapest way possible. The fruit came in due course, the price charged was reasonable, and the quality was excellent. At the station the rector found that there was no carriage to pay, but, alas! three months later a railway bill reached him, and then it turned out that the hamper having been marked —"Fruit—Perishable"—had come by passenger train, and the freight was actually more than the price of the fruit. In that very parish, inferior apples are now selling at 2s. 8d. the peck.

A DRINK LONG DRAWN OUT.—A story is told of a Scotch tailor who was often very dry in the morning, and could not, as a rule, raise the wind to get more than one dram. This being the case, he liked to hold it in his mouth as long as he possibly could. One of his neighbours, knowing this, met him, and was determined to make him speak. "It's a fine morning." "Umph." "It's a fine morning, I was saying." "Confound yer impidence, ye've made me swallow my whiskey."

MASSAGE.—In a recent clinical lecture (*Brit. Med. Journ.*), Dr. Hale White gives the following instructions for conducting the operation of massage, which at present is the popular rage: First grease the parts with vaseline or oil, and if the skin be very hairy it may be necessary to cut the hair; then stroke the muscles firmly several times with the edge of the hands in the direction of the venous flow. In places, such as the back, where this is impossible, always stroke in the same direction; on the abdomen, follow the course of the colon; next you may take up the skin between the thumb and forefinger, and rub it between them, one hand following the other, in the same direction as the stroking, then thoroughly knead the muscles with one or both hands, according to the size of the part, in the same direction as already mentioned; after this, move all the joints in every direction, then you may conclude by striking the muscles with several small blows, but this is not of much importance. The full time should be about an hour twice a day for the whole body. If there is a painful spot and the case be one of hysteria, particularly direct your energies to that part; of course, avoid the bones.

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—*Charles Mackay.*

GENIUS AND MENTAL DISEASE.

BY WILLIAM G. STEVENSON, M.D.

THIRD PAPER.

Charles Lamb, himself at times oppressed with mental gloom, stands almost alone in defence of "the sanity of true genius." With this view I am in accord, and, that the justification of this position may be seen, I desire to review the facts commonly cited against it.

Sophocles—poet, statesman, commander—was obliged to make a defence against the charge of insanity, instituted by ungrateful and avaricious children. He answered by reciting the tragedy of "Œdipus at Colonos," which he had just finished, and he then asked the judges if the author of such a work could be regarded as mad. The reply was "No!" and he was acquitted.

Lucretius—"writer of the purest Latin, and author of 'De Rerum Natura,' the most exalted poem of the age"—whose mind combined the "contemplative enthusiasm of a philosopher, the earnest purpose of a reformer and moral teacher, and the profound pathos and sense of beauty of a great poet," has been used to illustrate the kinship of genius and madness upon the unreliable evidence that he lost his reason from the effect of a "love-philtre" (a very ridiculous absurdity) which had been given to him; and after writing several books, during his lucid intervals, he committed suicide.

Were this allegation true, it could only show the baneful effect of a drug upon his brain, which is quite apart from the influence of any psychic cause. The historic facts are too few and insufficient to justify any statement as to the life and personal character of this man, who exerted such an influence over others by his writings, and yet, like Homer, was content to let his personality "pass through life unnoticed." Cæsar, Catullus, and Cicero were his contemporaries, and yet we know of him only through a brief record given by Jerome four hundred years after the poet's death. Independent of the historic doubts as to his insanity, the theory which makes a drug its potent cause should at least find reason for not uniting to it his genius.

That Socrates had his "demon," or guardian angel, may be true; but, if so, the hallucination corresponded with the accepted belief of the age, and therefore signifies nothing against his mental integrity.

Neither is there justification in using such illustrious names as Descartes, Newton, and Goethe, to prove that madness holds its court so near the temple of greatness.

It is true that Descartes, in an hour of deep intellectual abstraction, was "filled with enthusiasm, and discovered the foundations of a marvellous science," and it may be that during his profound meditations, in which he "turned the eye of reason inward upon itself, and tried to measure the value of his own beliefs," an idea became so dominant that the sense of hearing responded to its impression, as if a voice from without had called him "to pursue the truth." In no way, however, did this simple and momentary hallucination interrupt the great work of his life, and in no lawful way can it be interpreted as an expression of a morbid mind.

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The answer is: These are but the symptoms of Indigestion or Dyspepsia—the beginning and the forerunner of almost every other human disease. Indigestion is a weakness or want of power of the digestive fluids of the stomach to convert the food into healthy matter for the proper nourishment of the body. It is caused most frequently by the irregularity of diet, or improper food, want of healthy exercise, and pure outdoor air. It may be induced by mental distress—the shock of some great calamity. It may be, and often is, aggravated and intensified, if not originally brought on, by exhaustion from intense mental application, of physical overwork, domestic troubles, anxiety in business, or financial embarrassment. If the stomach could always be kept in order, death would no longer be a subject of fearful anxiety to the young and middle-aged, but what would be contemplated by all as the visit of an expected friend at the close of a peaceful and happy old age. However, the first hostile invader upon the domain of health and happiness is Indigestion.

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That Goethe once saw his own counterpart approach him I doubt not, but that this false perception, this passing incongruity—a mere incident of poetic reverie when the mind, self-absorbed, wandered in its fancy—should be classed as evidence of a pathological condition, and made to bear witness against the healthfulness of Goethe's mind, is an assumption extravagant and absurd.

That Newton was once "decidedly insane," as some allege, is doubtful; and that he ever suffered from any mental disturbance which justifies the inference that his genius was allied to madness, I hesitate not to deny. Mr. Sully says, "The story of Newton's madness, which is given by a French biographer, and which is ably refuted by Sir David Brewster, may owe much of its piquancy to what may be called the unconscious inventiveness of prejudice."

The facts, as I gather them, point to a congestion of the brain—which culminated in a brain-fever—the result of overwork under unfavourable hygienic conditions. Newton himself refers to his illness in a letter to Mr. Pepys, and again in a letter to Locke, wherein he mentions his loss of memory, and his sleepless nights. It is not strange that his illness should excite the fears of his friends, not only for his physical but for his future mental health. Mr. Pepys expressed his anxiety to Mr. Millington, who replied that he had recently seen Newton, who was then well, and that, although his illness had caused "some small degree of melancholy, there is no reason to suspect it hath at all touched his understanding." Huygens, a contemporary scientist, says, in a letter to Leibnitz in 1694, that Newton was ill for about eighteen months with phrenitis, or brain-fever, from which he recovered by the use of medicines. With these data before us, it is a misconception of physiological and pathological facts to assert that Newton was insane; and that there was a kinship between his mighty genius and madness, is contradicted by the intellectual work which has given immortality to his name.

The star seen by Napoleon, which was to him an omen of success; the vision which came to Cromwell, and spoke the words prophetic of his greatness; the apparition which uttered the ominous words to Brutus —"I am thy evil genius, thou wilt meet me at Phillipi!" the dreams and visions of Benvenuto Cellini; the "trees like men walking," as seen by Sir Joshua Reynolds; and the appearance of the devil to Luther—are all examples of hallucinations which are entirely consistent with reason, and are not justly indicative of insanity or mental disease. They represent a habit of mind which naturally under conditions of concentrated attention, intensified in an age tolerant of all forms of superstitions, "seeks for and creates, if need be, with or without consciousness, an outward object as the cause of its feelings." Luther, for example, saw with his "mind's eye" the image of the devil, which, in that age of religious excitement and credulity, was ever expectant in all minds, and generally present everywhere. "Hallucinations were," says De Boismont, "in the whole social community, not in individuals"; and hence it was that under the dominion of a general belief, however vague or irrational it may have been, the individual mind "demanded of imagination the realization of the phantasms of its dreams; and imagination, despite of the resistance of reason, endowed them with form and substance." Herein is found a distinguishing factor "between real insanity and the separate phenomena of genius and moral exaltation."

In further support of this opinion we may cite the hallucinations of Loyola, when he heard celestial voices; of Edward Irving, who received the gift of prophecy and the "power of tongues"; of Dr. Johnson, when the voice of his dead mother came to him; of Malebranche, when the deep feelings of his soul were to him the audible voice of Deity; and of Joan of Arc, who, under the guidance of saints, led the French arms to victory.

That genius "has its roots in a nervous organization of exceptional delicacy," is undoubtedly true, but it does not necessarily follow that the liability to mental discord and confusion is thereby increased, because this delicacy of brain-structure and its functions are admirably adjusted, and the very perfection of the mechanism enables it to work with the least possible friction or injury.

Under certain conditions, however, we have eccentricities of thought, feeling, and action, which indicate an unstable condition of nerve-element; but it does not follow that this instability necessarily impairs the integrity of the mind; much less does it imply that "genius," more than the lower expressions of mental power, is nearer the border-land of mental disease. I doubt not that permutations of this unstable condition may occur which, by supplementing the natural gifts of mind, cause a variety of individual traits. It may give to the poet Campbell indecision and indolence; make Carlyle cross and pessimistic; Byron proud, generous, and reckless; Schlegel foppish in his vanity; Keats despondent; Pope crafty and pretentious; Swift satirical, avaricious, and irascible; Chateaubriand egotistic and vain; Burns and Poe convivial and intemperate; Eliot sensitive and dependent; Hawthorne shy and modest; Wordsworth simple-hearted, yet full of conceit; and Ampère absent-minded and unpractical. Thus might I show certain peculiarities which belong to the personal mental outfit of almost everyone whose individuality is sufficiently marked to make him worthy of notice; but these peculiarities or eccentricities are not essentially morbid, neither do they give affirmative evidence that genius is related to madness. Such peculiarities belong to all orders of mind—the humble as well as the exalted—and cannot, therefore, have an exclusive application.

Add to the personal eccentricities of Pope, Byron, Johnson, Carlyle, and Swift the temper which at times became in them extravagant rage, and the proof is yet no stronger that genius and insanity are but different types of mental disease; for passion and appetite are, in all their forms, expressions of organic life and common to humanity, and therefore, as universal factors, they cannot be dissociated and made to bear witness either for or against the subject before us. It has already been admitted that eccentricities of character imply a want of mental poise or equilibrium, which is even more apparent in the extravagant passions which at times hold individuals under despotic control, and often indicate decided moral obliquity. This I do not deny, but yet affirm that the violent passion at times observed in one of exalted powers of mind is no more evidence in favour of the kinship between these powers and mental disease, than is the same passion, when displayed in a low and vulgar mind, proof that stupidity is a congener of madness. Mr. Madden is quite as justified in asserting that "the maladies of genius have their main source in dyspepsia," or I in affirming that, because some eminent men have been physically puny and ill-formed, therefore their genius is related to, and dependent upon, bodily imperfections.

Jottings from the Journals

"Th' ingredients of health and long life are
Great temperance, open air,
Easy labour, little care."—*Sir Philip Sydney.*

Heredity and Nurture.—In his third and concluding lecture at South Kensington, Mr. Galton dealt with the influences of various kinds of nurture, training, and occupation on the average vigour, longevity, and disposition of large classes of persons. He considered that the surroundings influence future generations rather than the present. With a diagram he indicated the relative proportions of early and late marriages in Germany, England, and European Russia, showing the enormous preponderance of late marriages in the first, and of early marriages in the last; considering that, when other things are equal, early marriages are followed by large families, he led up to the amusing conclusion that the "out-put" of Russian babies reached a thousand a day. From Dr. Ogle's report upon the death-rates of varying ranks, he illustrated his remark that the quality of stock varies with the status of the parents. He then proceeded to the unforeseen and wide consequences of apparently small reforms, instancing the smallness of families in France since the law regulating the equal division of property. In strong terms he then dealt with the prevailing want of statistical imagination and our consequent carelessness as to undoubted social duties, considering that the marriages of phthisical persons should be prevented by public opinion, if not by more stringent measures. He thought that obvious sanitary neglect should be treated as manslaughter, and that legal restraint should check the pursuit of any line of conduct whose average ill effect has been ascertained. In approving terms he referred to the establishment of professorships of physical culture at Amherst and Harvard Colleges in America, and quoted from a correspondent at Wellington the opinion that the "cultivation of man as a whole, and not only in part," should be encouraged by the bestowal of degrees. In New Zealand it would appear that a prize has already been awarded to the "best-made man." Of the value of gymnasia in the hands of medical men rather than of professional athletes, and of the importance of more rigid school hygiene, he also spoke enthusiastically. In conclusion, he gave a brief retrospect indicating his belief in the theoretical possibility of raising the standard of the race by a study of the influences that tend to *eugenism*, a word implying goodness in birth and in rearing.—*Lancet.*

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Dental Caries in Clarionet-Players.—In the *Vratch*, Nos. 30 and 31, 1887, Dr. P. Reformatsky, of Ekaterinoslav, publishes a valuable contribution to the study of professional diseases of the teeth. The author, who is surgeon to the Simferopolsky Infantry Regiment, has examined the teeth in bandsmen of his own and four other regiments. He found dental caries in about 50 per cent. of the men, but he was especially struck with the great frequency of a characteristic caries of the upper central incisors which was present in fifteen of twenty clarionet-players belonging to two regiments. In playing, the mouthpiece of the instrument is pressed against the outer surface of the lower lip, which then forms a kind of soft protecting cover for the lower teeth, while the upper aspect of the mouthpiece is kept in direct contact with the upper incisors. This may have an injurious effect on these teeth, not only by the pressure to which they are subjected, but also by exposure to cold, as bands in Russia have often to play in the open air during severe frost. Of four varieties of clarionets used in military bands, namely, C, B 1, B 2, and B 3, the most injurious effect on the teeth is produced by the C, which requires the greatest exertion of the player's lungs and the strongest pressure of the mouthpiece against the upper incisors. The professional disease begins in the enamel, which is rubbed or ground away; then the dentine is destroyed, and ultimately the whole tooth is invaded by caries, and either falls out altogether, or remains as a loose and shaky stump. The course of the destruction is very characteristic. At first the edge of the two middle incisors loses its sharpness, and becomes flattened; later on, owing to the oval shape of the surface of the mouthpiece, which is pressed mainly against the internal (adjoining) halves of the edges of the incisors, those halves are ground away to a greater extent than the outer ones. A semicircular notch is thus formed, which may best be seen when the patient is examined with his jaws closed. The teeth of fair-skinned men seem to show less power of resistance to the mechanical action of the mouthpiece than those of individuals of darker complexion.—*British Medical Journal.*

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Laundry Infection.—The scarlet fever epidemic through which we have lately passed suggests reflections on the various channels through which infection may be conveyed. I have long suspected that ordinary laundries occupy a prominent place among these. The march of highfalutinism (I claim copyright for the word) is proceeding with such violent strides that the ancient and venerable domestic institution of "washing day" at home is banished from many households where it formerly flourished, and its material is now consigned to a basket and carried somewhere, to be purified or otherwise. Among the tens of thousands, I may say hundreds of thousands, of loving wives and mothers who thus send away the body-linen and bed-linen of their husbands, children, and selves, how many are there who have inspected the houses in which those clothes are washed, and the places where they are dried? How many are there that know assuredly whether during the recent epidemic any members of the family of the laundress, or the other families lodging under the same roof, have suffered? These questions are suggested by what I saw a few weeks since in the neighbourhood of St. John's-wood. A girl painfully disfigured by unhealed pustules of small-pox or similar disease, her eyes bleared, and eyelids suppurating, was carrying a basket of linen, which, from its appearance, belonged to well-to-do people. In large laundries the danger from personal infection on the spot is not likely to arise, but there is another danger to which they must be more liable than the small places, viz., that from infected clothes sent to the laundry. Not having visited any of these establishments, I do not know what precautions are used; the most obvious, simplest, and probably the most effectual, would be to pass everything through a hot chamber, the air of which should be raised well above 212 degs. Fahr. A convenient form for such a chamber or oven would be that of the "leer," or annealing oven, of a glasshouse, a sort of tunnel with rails carrying trays which are pushed one stage forward with each new tray that is admitted; one being taken out from the other end to admit it, each end having, of course, suitable doors. The cost would be very small, including both fuel and labour.—*W. M. Williams in the "Gentleman's Magazine."*

German Trade and Health Statistics.—The reports of the German factory inspectors for 1886 contain some interesting statistics respecting the hours of labour, accidents, &c., in various districts and in different employments. On the whole, the number of work-people increased, in the fifteen districts for which reports are published, from 596,561 in 1884, to 642,386, being an increase of 33,496, or 7·7 per cent., of males, and 12,329, or 7·6 per cent., of females. The industries in which the chief increase took place were textiles, food, wood, and carving. There was a great decrease in the number employed in mining. In some districts there was a great lack of employment, while farmers were complaining that they could not find labourers to do their work. In Bavaria, in 29·4 per cent. of all industries the hours of labour were from 11¼ to 16 hours daily; in 59·6 per cent. from 10 to 11 hours; and in the remainder from 11 down to 5 hours. The last-named time applied only to the work of putting the quicksilver on the backs of looking-glasses. Excessively long hours prevail in breweries, where they are never less than 16 hours a day. In the Düsseldorf district nearly 40 manufacturers of textiles have entered into a convention not to make the working day longer than 12 hours. According to a regulation made in 1885, all accidents in factories must be brought to the knowledge of the inspectors. This accounts for the apparently enormous increase in the number of accidents: 2,394 were brought to the inspectors' notice during the year. These are arranged under two heads: (1) The causes; (2) The consequences to the victim. More than one-half are put down to inevitable accident, and more than one-third to carelessness and want of skill. More than four-fifths were attended only with temporary incapacity for work. The work-people appear to understand and enter into the spirit of the recent insurance laws; but it seems from the reports that the increase of children's labour, the night-work of women, and the prolonged hours of labour of women and children in certain places, are the next subjects connected with German labour that call for legislative regulation and interference.

Our Letter-Box

"Conference [maketh] a ready man."—*Bacon.*

NOTICES TO CORRESPONDENTS.

All Communications for the Editorial Department (including Books for Review, Specimens of Sanitary Appliances, &c.), to be addressed to "THE EDITOR OF HEALTH," 2, PATERNOSTER-SQUARE, LONDON, E.C. *Those intended for the Publishing Office to be sent to* MR. A. P. WATT, THE PUBLISHER, *at the same address.*

RULES FOR CORRESPONDENTS.

OWING to the mass of letters which reaches us each week, we respectfully direct the attention of Correspondents, desiring replies in the LETTER-BOX DEPARTMENT of HEALTH, to the following rules:—

1. All questions are answered free of charge in the columns of HEALTH.
2. All letters must be legibly addressed to "The Editor of HEALTH, 2, Paternoster-square, London, E.C.," *and to no other address.*
3. Questions to which answers are desired by post, are so replied to solely at the Editor's discretion. If no answer is sent by post, the query will be replied to in the "Letter-Box" columns of HEALTH. A stamped addressed envelope must accompany all queries to which a private reply is desired.
4. Addresses of physicians and surgeons will, as heretofore, be forwarded FREE to Correspondents on their enclosing a stamped addressed envelope for reply.
5. Correspondents are requested to write on one side of the paper only, and to make their inquiries as brief as may be consistent with clearness.

"ELECTRICITY IS LIFE."
(TRADE MARK.)

PULVERMACHER'S
WORLD-FAMED
GALVANIC BELTS,

FOR the CURE of NERVOUS DISEASES.
HAVE RECEIVED TESTIMONIALS from
THREE PHYSICIANS to
HER MAJESTY the QUEEN,
THE ACADÉMIE DE MÉDECINE of Paris and
FORTY MEMBERS of the
ROYAL COLLEGE of PHYSICIANS of LONDON.

RECENT TESTIMONIALS.

GALVANISM *v.* GENERAL WEAKNESS and NERVOUS DEBILITY.
Joseph-road, Stoke, Near Guildford, 6th February, 1888.
Dear Sir,—It is with the greatest thanks that I send this testimony in favour of your galvanic appliances.
Three months ago I purchased your Combined Band for general weakness, and wore it according to directions, and now I can honestly say I am quite strong again. The languor and inability for exertion have entirely disappeared, and I am now quite well. I would no part with your Combined Band for any amount of money, and I advise all sufferers from nervous weakness and exhaustion to give your treatment a trial. I shall be pleased to answer any inquiries, and beg to remain yours faithfully, W. BROWN.
Mr. J. L. Pulvermacher, 194, Regent-street, W.

GALVANISM *v.* NERVOUS EXHAUSTION.
Oxton, Birkenhead, January 27th, 1888.
Dear Sir,—I am continually recommending your appliances to my friends, several of whom, as well as myself and family, have derived much benefit from wearing your Galvanic Belts.—Yours faithfully, H. HOPE.
Mr. J. L. Pulvermacher, 194, Regent-street, W.

GALVANISM *v.* LUMBAGO and RHEUMATISM.
94, Brunswick-street, Hackney-road, E., January 12, 1888.
Dear Sir,—Two years ago I had a severe attack of lumbago and rheumatism, and was confined to my bed for several days. I got worse and worse, and was obliged to call in a doctor, who informed me that I was suffering from the above complaint. I then sent for one of your Galvanic Belts, which acted like magic, for in a short time it completely cured me, and I have never suffered since. I consider your Galvanic Belt is worth its weight in gold, and I have lent it to several friends, who have derived great benefit from it.—Yours respectfully, H. R. HALES.
J. L. Pulvermacher, Esq., 194, Regent-street, W.

GALVANISM *v.* NEURALGIA.
Whitacre Station, near Birmingham, Jan. 9, 1888.
Dear Sir,—I am pleased to inform you that after wearing your Galvanic appliance for about two weeks the neuralgia quite left me, and I have not felt any pain since.
I feel better and stronger in every way.—Yours faithfully,
J. L. Pulvermacher, Esq., 194, Regent-street, W. T. METCALFE.

GALVANISM *v.* VARICOCELE.
Montgomery-street, Sparkbrook, Birmingham, January 7th, 1888.
Gentlemen,—I have much pleasure in informing you that the Galvanic Belt which I purchased from you in October last has quite removed all symptoms of varicocele.
I have not had the slightest pain since wearing your Galvanic appliance.
Yours truly, J. PASS.
Messrs. J. L. Pulvermacher & Co., 194, Regent-street, W.

GALVANISM *v.* ASTHMA.
Eastbourne, 6th Jan., 1888.
Dear Sir,—I am pleased to say that I have greatly benefited by the use of your special appliance for asthma; in fact, after the first three weeks my asthma entirely left me.—Yours truly, B. SHEPHERD.
Mr. Pulvermacher, 194, Regent-street, W.

GALVANISM *v.* NERVOUS EXHAUSTION.
Bradford, January 4th, 1888.
Dear Sir,—I am pleased to inform you that since wearing your appliance I have gained much in physical strength, general health, and mental power, with increased buoyancy of mind.
I consider that your treatment has enabled me to resume my work, that of teaching, and to find a pleasure in life and in my daily duties.
With many thanks for the benefit I have received, yours very truly,
Mr. J. L. Pulvermacher, 194, Regent-street, W. (Miss) H. HURRY.

GALVANISM *v.* NERVOUS EXHAUSTION.
The distressing symptoms of Nervous Exhaustion and Debility are speedily removed by means of PULVERMACHER'S world-famed GALVANIC BELTS, which are so arranged as to convey a powerful electric current direct to the affected parts, gradually stimulating and strengthening all the nerves and muscles, and speedily arresting all symptoms of waste and decay.

ADVICE PERSONALLY or by LETTER, free of charge.

FOR FURTHER TESTIMONIALS, both Medical and Private, see new Pamphlet, "GALVANISM: NATURE'S CHIEF RESTORER OF IMPAIRED VITAL ENERGY," post free on application to
J. L. PULVERMACHER AND CO.,
GALVANIC ESTABLISHMENT,
194, REGENT-STREET, LONDON, W. (nearly opposit Conduit-street).

6. From the necessity of sending HEALTH to press early in the week, no Correspondent can be replied to in the "Letter-Box" columns in the same week in which the inquiry is received. Replies crushed out of any issue will be found in the succeeding number.
7. No Post Cards must be used in sending queries. Violation of this rule deprives the sender of the privilege of a reply.

QUERIES AND ANSWERS.

REPLIES: GENERAL, SANITARY, AND MEDICAL.

[Readers of HEALTH will kindly note that when back numbers of the journal are desired, the letters containing such requests and stamps for the numbers should be addressed to the PUBLISHER of HEALTH, 2, Paternoster-square, London, E.C., and *not to the Editor*.]

B. GILL.—You address the Publisher instead of the Editor. We advise you to exercise great cleanliness, and to wash all irritated parts regularly with Bayley's Soap and tepid water. If the irritation is very great, apply, after washing, a little of a lotion composed of bicarbonate of soda, one drachm; glycerine, an ounce and a half.

C. P.—Read the pamphlet, "A Lecture to Young Men" (post free, 1s. 1d., from Mr. Renshaw, 356, Strand, London, W.C.), and study what is there said about cases like yours. You are only low-spirited, and the pamphlet will serve to ease your mind.

R. F.—The sebaceous glands of the skin are minute glands which secrete an oily matter. Their function is probably that of supplying a "natural oil" to the skin. Filled-up sebaceous glands constitute "blackheads." A small and harmless mite (*Demodex*) is often found among the sebaceous matter.

ORMER.—Allow one of the Chlorate of Potash tabloids to dissolve in your mouth occasionally. Rest after your meals. Look well to your teeth, and use Dr. Pierre's Tooth Powder and Eau Dentifrice as a healthy mouth-wash.

BATH.—Quacks always write in the style you name, because they can only succeed thus in terrifying their victims into consultation by causing them to imagine they are afflicted with serious disease. You will find your questions answered and your mind relieved of apprehension by reading the pamphlet recommended to "C. P." in the present number.

FRANCIS M.—A remedy for corns may be tried as follows:—Extract of Indian hemp, fifteen grains; salicylic acid, thirty grains; collodion, one ounce. Mix. To be labelled, "For outward use only," and to be applied to the corns with a brush.

G. PAXTON.—Read the pamphlet, "A Lecture to Young Men" (post free for 1s. 1d., from Mr. Renshaw, Medical Publisher, 356, Strand, London, W.C.), and follow out the diet and other hints therein given.

M. LITTLE.—Give up the use of the appliance for a time, and wash the parts with Bayley's Soap, dusting on a little Fuller's earth after washing. You have over stimulated yourself, and are simply nervous. Keep your mind quite easy, and attend to your general health and diet as directed. We will send addresses of medical men on receipt of stamped addressed envelope.

CORAX.—The belt you name is reliable in every way. The electricity is simply generated in a different manner from the other case.

PETER S.—Use a soft brush for the hair, which should on no account be washed daily with cold water. See advice given to "Martin Box" last week regarding the treatment of the hair. The preparation there named will probably arrest the greyness, which has doubtless been caused or hastened by too frequent washing of the head.

TANTO.—Remove the hairs all round the affected parts in the first place. Wash each morning with "Sanitas" Soap and tepid water. Thereafter paint the patches with sulphurous (*not* sulphuric) acid. If this treatment fails, apply a lotion consisting of hyposulphite of soda, of strength thirty or forty grains to the ounce of water. See to the children's general health. Give them a dessert-spoonful of Scott's Cod Oil Emulsion (with five drops Fer Bravais added to the oil) thrice daily after their meals, and send them away for change of air to the seaside.

RETFORD.—You simply suffer from "blackheads," which are filled-up skin-glands. Press out the matter from the glands, and then sponge the parts with a little of Bayley's Eau de Cologne. They are an evidence of defective skin-action. Take warm baths, use brisk friction to the skin, wash with Bayley's Soap, and avoid excess of fatty foods.

ALFRED P.—Use Stern's "Pumiline" as an inhalation for colds. See full notice of this remedy in HEALTH, No. 252.

BROMPTON.—Take a claret-glass of Vin Mariani (Roberts & Co., New Bond-street, London, W.) before your meals twice or thrice daily, as an excellent tonic for your case; and try a cold or tepid sponge bath each morning.

THE SECRETARY SPEAKS.

THE following circumstances, drawn from the personal experience of Mr. Isaac Whick, of the "Borough Arms," Dudley-street, Wednesbury, are so important and really remarkable that they cannot help but be of interest and value to all readers:—

To the Editor.

SIR,—My motives for the publication of the most unusual statements which follow are, first, gratitude that I have been saved from a most horrible death, and, secondly, a desire to warn all who read this statement against some of the most deceptive influences by which they have ever been surrounded. It is a fact that to-day thousands of people are within a foot of the grave, and they do not know it. To tell how I was caught away from just this position, and to warn others against nearing it, are my objects in this communication.

During 1882 I felt pains in the small of my back, gradually growing in intensity until I was forced to call in my medical adviser. He diagnosed my case, and confirmed my own ideas by stating that I was suffering from disease of the kidneys. He gave me many of the usual remedies, put me on a strict diet, and for nearly three years I was under his treatment, but constantly grew worse. I was forced to pass water every few minutes during the day and night, and always with the greatest pain and burning sensation. If allowed to stand for a short time, a heavy white sediment would form in the bottom of the vessel. Several times my urine was analysed by the most competent men. I was frequently confined to my bed for several weeks at a time, could not attend to my business, and had wasted away in flesh until I was a mere shadow of my former self. My appetite left me, and I began to consider my case a hopeless one, as my friends showed by their actions that they did. In the early summer of 1885, after five years of suffering and wasting away, an old physician to our family from a neighbouring city was, at my request, called in consultation with my regular medical attendant. A difference of opinion rose between them as to whether my complaint was kidney trouble or stone in the bladder, and a surgical examination was decided upon, but could not then be made, owing to my reduced condition and the inflamed state of my bladder. In the meantime, though confined to my bed, it was decided to consult the most eminent medical man of Birmingham as soon as my condition would allow, in company with my medical men, all of whom reported large quantities of albumen as passing from me, and all agreed that I was in a dangerous condition. I went to Birmingham, suffering greatly from the effects of the journey, and after a full examination and consultation, was told by the physician no medicine would cure me. When I asked what was the matter with me, he stated that the acids passing through my bladder from the kidneys had entirely eaten away the inner lining of the bladder, and that this was true had been before proved by the analysis of my urine, in which particles of this lining had been found. I then asked regarding my chances of recovery, but he said to me that my own medical man would tell me when we got home; but this the latter refused to do, always putting me off with one excuse or another whenever I would ask him what Sir —— had said about me. In September, 1885, I read a book left at my house, in which the symptoms of my disease were clearly put, and also some letters from people suffering as I was, and statements from them that Warner's SAFE Cure had effected cures in their cases. I argued that all these people certainly could not lie, and that, as I could get no benefit from any medical man, I would try Warner's SAFE Cure. I bought one bottle, and after taking it, experienced some benefit, my appetite improved, and I was just a little better. I bought more, and with each bottle I could see and feel an improvement, until, in January, 1887, I was so much improved that all my friends were amazed, and were congratulating me on my recovery. During part of this time my regular attendant gave me medicine, which I put untasted in the cupboard, and continued taking only the Warner's SAFE Cure, and constantly improving under its use. It was now that my medical man told me that in the August previous Sir ——, of Birmingham, had said I could not live three months, and at most not until Christmas (1885). In all, I have taken only twelve bottles of Warner's SAFE Cure, the last some months ago, and during the time I took no other medicine of any kind; and to-day I am a perfectly well man, and weigh seven pounds more than I ever did in my life, my weight now being thirteen stone and eleven pounds; my appetite is as good as it ever was, and I have no sign or symptoms of any disease or disorder of any nature; and I consider that I owe my health, if not, indeed, my life, to Warner's SAFE Cure.

(Signed) ISAAC WHICK,
Secretary of Retail Brewers' Protection Association.

A statement like the above needs no comment. Those who are suffering should profit by the experience of Mr. Whick before it is too late. The remedy he used can be had of all chemists at 4s. 6d. per bottle, or of H. H. WARNER & Co., 86, Clerkenwell-road, London, E.C.

ROMOLA.—You should rest after your meals; avoid vegetables; take light foods—soups, milk, white fish boiled; light puddings, &c., for a time, and try Pepsine with your food. If acidity is present you may try the following:—Subnitrate of bismuth, six grains; carbonate of magnesia, ten grains; powdered gum arabic, twenty grains. Mix to form a powder. Stir in a cup of boiled milk, and, when cool, stir up again before being swallowed. To be taken twice daily after food.

DELAYED.—You were replied to in last week's HEALTH. If you had read our "Notices to Correspondents," you would have seen that you cannot receive a reply here in the same week as that in which you write. Answering so many correspondents, and giving attention to all, requires exercise of ordinary patience on your part.

LOCUS.—Try five drops of pure Terebene (Burroughs, Wellcome & Co.'s) on a piece of sugar, after your meals, for flatulence. You had better avoid tea and coffee altogether, and substitute milk instead.

DABCHICK.—You should clearly understand that no drug or remedy alone can ever cure constipation. Try Cascara Cordial in twenty-drop doses taken in water, once or twice daily, between meals; and follow up this remedy, and render its effects permanent, by the use of a diet largely vegetable in its nature—such as Grant's Oat Flour, stewed fruits, prunes and apples, ordinary vegetables, &c.; avoiding tea and coffee, salt foods, pastry, &c. Salads with plenty of oil should also be tried. Eat Dahl's Cakes also as part of the treatment.

P. P. P.—Use Sanitas Fluid freely in such a case to the skin and clothes. Use the Powder to the closets and sinks.

ANDREW GREY.—For the prevention of boils, try the following:—Sulphide of lime, twelve grains; sugar of milk, half an ounce. Mix. Take as much of this powder as will lie on a sixpence every four hours.

TORONTO.—Unless any belt has a battery attached thereto, or has other definite means of producing powerful currents, it is, "electrically," a fraud. No belt which consists simply of flannel or such material with metal discs sewn therein, can be of the slightest service electrically. It may relieve ailments, it is true, but only by affording warmth and support—not by producing electrical currents. Read the pamphlet recommended to "C. P.," in the present number for a full account of the treatment necessary for your case.

S. M.—Rest after your meals regularly and rigidly, and try what an ordered course of diet will do for you, without drugs at all. Thus, avoid tea and coffee in excess, and take in their place milk peptonized with Fairchild's Powders—to be had from any good druggist. Avoid pastry, salt meats and cheese; and take white boiled fish, Brand's Beef Essence (as soup), and stale bread only. Grant's Oat Flour may be taken occasionally for supper. You must also take outdoor exercise freely, and try Bokö̈l as a malt dinner beverage likely to do you good. If not bettered thereby, write again.

INCREDULOUS.—The idea you name is, as you suppose, a quack one. All that can be said is that the ailment is a disagreeable one. To cure it, look well to the teeth, and use Dr. Pierre's preparations as advertised in our columns. The Eau Dentifrice makes a capital mouth-wash; also try the powders recommended to "A. M. P." in last week's HEALTH. If the patient's chest is sound, the ailment may be readily cured. If the chest is weak, have it examined by a physician.

A SWORN STATEMENT.

The *Hull News* says: The following is remarkable proof of the wonderful powers of an astonishing new remedy: Henry Coates, of 11, Cheatham-place, Adelaide-street, Hull, railway employé, who had been a terrible sufferer for many years from rheumatism in its worst forms, having read of it, determined upon a trial, which has been attended with the most extraordinary results; and, being anxious that his experience should be known to other sufferers, he determined to bring it forward in such a manner as to leave no possible doubt of its reliability. So he appeared before Mr. E. Singleton, a commissioner, and made oath as follows: He affirmed that he had been totally unable to work for a long time, and had been confined to his bed for a considerable period; that he had tried various doctors and many remedies, but that he grew worse instead of better; that at that time his joints were so swollen that he could not wear boots, and two crutches were hardly sufficient to support him. After having heard of St. Jacobs Oil he purchased a bottle. In twelve hours he found relief, and, persevering in its use, he is now cured of rheumatism, works daily, and can not only walk with ease without a stick, but can run; he enthusiastically recommends this great remedy to anyone suffering from any form of rheumatism, as it has not only done wonders for him, but many of his friends. Referring to the foregoing, Dr. T. Waraker, LL.D., Inter-collegiate Law Lecturer at Cambridge University, writes from his residence, 5, Scroops-terrace, Cambridge; "I have much pleasure in stating that, having been convinced from well-authenticated cases within my personal knowledge of the great success which has attended the employment of Jacobs Oil in cases of rheumatism and neuralgia, I have recommended it to several friends, and it has been used in my house for these affections with very beneficial results."—[2308.]

VINDEX.—Try taking twenty grains bromide of potash in a wineglass of water when your symptoms trouble you.

ROY.—1. Try first of all the treatment recommended to "S. M" above. 2. Pulvermacher's Belt undoubtedly, where such an appliance is required. 3. No harm whatever.

PICA.—In what way are your trifling ailments "a disadvantage" to you? For the hands, wash with Bayley's Spermaceti Soap, and thereafter dust on the palms Woolley's Sanitary Rose Powder. Take internally fifteen drops Fer Bravais in water after your meals.

PRECEPTOR.—Many thanks for your note. The drug cannot be obtained except by a physician's prescription; the case you name is therefore of no moment. The dose was not excessive as the writer indicated a special preparation.

CONCHA.—Try Dahl's Cakes (advertised in our pages) for the cure of constipation. They are a safe and excellent remedy.

ROMEO.—Rest after meals, and take the Pure Terebene as ordered to "Locus" in the present number. Avoid beer, and try Bokö̈l as a suitable dinner beverage. The hints about foods given to "S. M." in the present number may also benefit you.

T. P. G.—You might with advantage try the Quebascho Extract as a pile remedy. Order from Messrs. Brown & Co., Farringdon-road, London, E.C., and apply as a lotion as directed on the bottle. If this fails, try the Geddes' Hemlock Bark Extract as a lotion (Holborn-chambers, London, E.C.). Use Dahl's Cakes (advertised in our pages) as a remedy against constipation. Hazeline is also a simple and admirable external remedy. Use this undiluted as a remedy for the irritation of which you complain. For the rest, we should advise you to avoid all mental work for a time at least. Judicious living, in the way of simplicity in diet (such as you are practising) and avoidance of mental exertion, added to residence in a more southern resort, should do you good.

J. HOOKE.—Read the pamphlet recommended to "C. P." in the present number, and follow out the hints given therein, regarding diet and tonics. If not bettered thereby, write again.

Y. Z.—We do not know of any such process, save putting the pieces in moulds.

LONG SUFFERING.—Your questions are such as can only be answered satisfactorily by a physician after a personal examination of your case. No general replies can be satisfactory or accurate in character; so much depends on the patient's constitution. We can send you address of a reliable authority on receipt of stamped addressed envelope. Much can be done in such cases to effect a cure.

OPAL.—Try a Pulvermacher's Belt (advertised in our pages) as it is well suited for a case like yours. If this treatment does not suffice, write again. Pulvermacher's Belts are genuine appliances and of highly powerful nature.

J. T.—It is probable your ailment arises from slight want of tone. Try the effect of taking a teaspoonful of Syrup of the Hypophosphites in a wineglass of water twice daily, after your food, and avoid excess of vegetables. If not cured, write again.

JACK.—See advice given to "Opal" above, and address Mr. Pulvermacher, 194, Regent-street, London, W. Before doing so, however, read the pamphlet, "A Lecture to Young Men" (4th Edition—post free for 1s. 1d., from Mr. Renshaw, 356, Strand, London, W.C.), and note what is said therein regarding cases like yours.

W. B.—Take a tumbler of hot water between your meals twice or thrice daily. You would be safer to use Grant's Oat Flour in place of oatmeal. The flour is more digestible. As regards your diet at large, see advice given to "S. M." in this week's number.

B. S. F.—The child should have Mellin's Food only, till it can be weaned. Starchy foods are poisonous to infants under eight months of age.

OMAR.—Thomson's Cod Oil Cream should be taken by you in dessertspoonful doses after meals. See advertisement in our pages.

A MOTHER.—We should advise absolute rest before and at the periods named. This is in itself a curative measure. In addition, try the effect of giving two antipyrin tabloids (five grains each) every two hours, until six tabloids have been taken when the pains are severe, repeating these doses next day, if necessary. The tabloids are to be had from druggists, and are made by Messrs. Burroughs, Wellcome & Co., Snow-hill-buildings, London, E.C. All mental excitement should be avoided. The treatment above ordered will probably have a good effect on the other ailment you name. Alcohol should not be given under the circumstances named. Between the periods give Fer Bravais in fifteen-drop doses, after meals, thrice daily, in water, as a needed tonic.

CARBON.—1. Continue to paint the glands with iodine, and, internally, take cod liver oil which has had syrup of the iodide of iron added to it. Your druggist will compound you such a mixture of oil and iron. Take a dessertspoonful, after meals, thrice daily. 2. Continue the hair-wash; if it fails, rub a little glycerine of borax into the roots morning and night, and use a soft brush only.

D. O.—1. Simply provide yourself with clothing for heat and cold also. Write to Messrs. Ward & Co., Eldon-buildings, Bradford, and take their advice on the matter. Purchase from them sanitary wool underclothing, both of heavy and light texture, and you may defy all climatic changes. 2. Try Syrup of the Hypophosphites, a teaspoonful to be taken in a wineglass of water, after meals, twice daily.

A FAITHFUL READER.—You need not be alarmed. Read the pamphlet, "A Lecture to Young Men" (Fourth Edition, post free for 1s. 1d., from Mr. Renshaw, 356, Strand, London, W.C), and note the full directions therein given for cure of constipation and for the tonic and hygienic treatment of a case like yours. Follow out the advice given in the pamphlet, and you will get quite well.

CAROLUS.—1. They should not be worn constantly. 2. The belts you name are not electrical or galvanic in any sense. Read the pamphlet above recommended to "A Faithful Reader," and note what is said therein about the choice of a belt. Pulvermacher's is that we can thoroughly recommend. If you are a reader of HEALTH, you must surely have noticed our frequent warnings against bogus electric belts.

PARADOX.—See and follow advice given to "A Faithful Reader" in this number. Peruse the pamphlet carefully, and follow out its instructions regarding diet, &c. You need not be alarmed or despondent; cases like yours readily recover by attention to the advice given in the pamphlet above noted.

A. GREFNELL.—Try the plan of smearing pure laudanum with the fingers over the irritable surface. A useful application for such a sore is an ointment made by incorporating one part of laudanum with three or four parts of cold cream.

OLD BOY.—You must persevere with the treatment ordered, and keep your mind at rest. Try a dose of Lamplough's Pyretic Saline on rising in the morning, and follow out the other food-directions already given you. You will get quite well in time. Take a cold sponge bath each morning, and use brisk friction thereafter. See also that you take plenty of open-air exercise.

TESTA.—Dr. Pierre's Eau Dentifrice should be used night and morning by you as a mouth wash, and the Tooth Powder of Dr. Pierre for the teeth. These preparations prevent tooth decay. Use a brush of moderate hardness and tepid water.

EDINBURGH.—Rest after your meals, and avoid constipation. Take twenty drops Cascara Cordial twice daily, between meals, in water, and give up tea and coffee, taking milk and Grant's Oat Flour in place thereof. For the rest, take white boiled fish, W. Polson's Corn Flour, and milk puddings made with Tritola. If flatulence is present, try five drops of Pure Terebene on a piece of sugar after your meals. If not cured, write again.

A. S.—Get some honey and borax from your druggist, and use it as an application to the tongue. Also allow a chlorate of potash tabloid to dissolve in the mouth occasionally, and, internally, take fifteen drops of tincture of the perchloride of iron, in half a tumbler of water, after your meals, twice daily. If not cured, write again.

NEMO.—What you mention does not appear to be the disease you name at all. We advise you to exercise rigid cleanliness, and to wash the parts morning and night with carbolic soap and tepid water. Thereafter dust on the parts a little of Woolley's Sanitary Rose Powder. Internally, take fifteen drops Fer Bravais after your meals, in water, twice daily.

ARISTOTLE.—Wear a simple suspensory bandage, and bathe the parts night and morning with tepid water, to which a little Hazeline has been added. Rest as much as possible, and avoid standing for long periods, till you have recovered.

W. R. T.—Try taking a teaspoonful of the Syrup of the Hypophosphites in a wineglass of water, after meals, twice daily. If this fails, try a claret-glassful of Vin Mariani (Roberts & Co., New Bond-street, London, W.), after your food, thrice daily.

REPENTANCE.—Exercise great cleanliness of person, and wash the affected parts regularly morning and night with Bayley's Spermaceti Soap, dusting thereon afterwards Woolley's Sanitary Rose Powder. Avoid constipation by regular diet and the use of Dahl's Cakes (advertised in our pages), as this condition is a predisposing cause of the annoyance of which you complain.

CALTON HILL.—Conditions such as you complain of yield, as a rule, to care in diet and especially to the avoidance of constipation. See advice on this latter head given to "Edinburgh" in the present number. Try an injection, morning and night (for a few days), made by adding a teaspoonful of Hazeline to half a tumbler of tepid water.

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[The above letter, dated Sept., 1886, is from a medical gentleman in extensive practice in a large city in the North of Ireland.]

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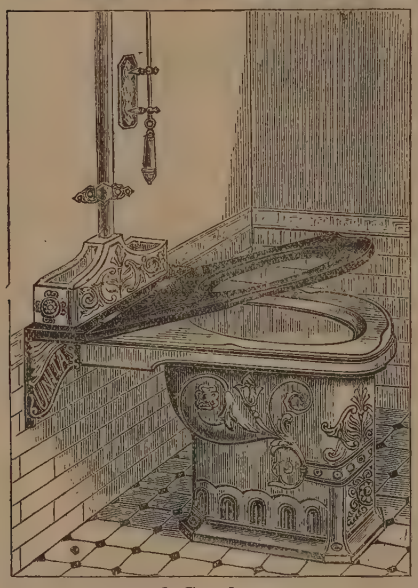

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◆ HEALTH ◆

EDITED BY

DR. ANDREW WILSON, F.R.S.E., &c.

LONDON: *FRIDAY, FEBRUARY* 10, 1888.

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Notes by the Way

BY THE EDITOR.

"Health is the foundation of all our physical happiness."—*Herder.*

A CORRESPONDENT writes to suggest that I should note in these pages the idea, that, by keeping the mouth closed, and by breathing, when out of doors, through the nose, we might avoid the colds and coughs which afflict us in the colder season of the year. He adds that, when we drink, we should "allow the liquid to cover the upper lip, so as to exclude the air." Now, the first of these suggestions is, I believe, a good one. It is not a novel idea to keep the mouth shut, and to breathe through the nose. Mr. Catlin, famous for his travels among the North American Indians, noted years ago the fact that they breathe through the nose only, and that an Indian mother carefully closes the mouth of her sleeping child, should the infant unclose its lips. "Keep your Mouth Shut" was the title of Mr. Catlin's pamphlet, published a long time ago.

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THERE is a good physiological reason for this practice. The nostrils are undoubtedly our natural breathing channels. The air inhaled by the nostrils is warmed as it passes over the mucous membrane of the nose and pharynx, and thus goes to the lungs in a condition less likely to cause chill. There is doubtless also, a certain amount of air-filtering action performed by the nostrils when used as breathing apertures. The lower animals are nose-breathers. Witness even an over-driven horse, whose nostrils pant and expand in the exercise of respiration, while his mouth is kept closed. The use of the mouth in speech is, of course, a reason for the greater prevalence of mouth-breathing in man, but I advise my readers to practise nose-breathing, especially when out of doors in winter.

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As regards my correspondent's second remark, regarding the exclusion of air from the mouth in drinking, I cannot agree in this suggestion. If the idea is to exclude germs or air by this practice, I can only say we should lamentably fail in such an intent, even by the exercise of the greatest care. Besides, I can scarcely see how any degree of care could suffice for the perfect exclusion of the atmosphere; and this, I take it, would be necessary for the full benefits of the practice, as described by my correspondent. Anyhow, as the nose is our natural "respirator," the above hints may serve to indicate that, for ordinary cases of lung troubles, the artificial and hideous-looking appliances so often worn are really unnecessary.

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AN interesting paper by Mr. Daniel Morris, on the use of certain plants as alexipharmics, or snake-bite antidotes, has been published. Mr. Morris explains that his enumeration of the plants reputed to possess such properties is offered without any expression of opinion as to their value. It is intended chiefly as an attempt to bring together for the first time a summary of information about these plants, in order that inquiry may be made to confirm or refute the popular opinion respecting them. "Opportunities," says Mr. Morris, "to test the action of these plants on a person actually bitten by a well-known poisonous snake are seldom offered to a competent investigator. But as material is being brought together which can be carefully tested by chemical and therapeutical investigations, the most prominent of these plants, such as species of *Aristolochia* and *Mikania*, deserve very careful attention."

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TEA-DRINKING in excess has often been condemned by me in these pages as a source of nervous diseases. The *Lancet* remarks that tea has a powerful action on the nervous system of some individuals. Dr. Bullard, of Boston, believes that it may produce a chronic poisoning of the nervous centres, shown in increased excitability, due partly to direct action of the alkaloid on the nervous matter, and also indirectly by the production of gastric

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or stomach-derangement. Taken, therefore, too frequently, even in moderate doses, it places the nervous system in a condition of greater vulnerability to slight external influences, and favours the development of functional neuroses, or helps to render them permanent.

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Whilst there is no evidence to show that tea causes organic changes in the nervous tissues, yet my contemporary adds that if such exist, tea may readily aggravate some of the symptoms. Tea may act as an important factor in the causation of neuralgia, hysteria, and allied affections. When taken constantly in large doses, dyspepsia usually supervenes before irreparable harm is done to the nervous system. In painful headache affecting one half of the brain, and possibly some other functional nervous ailments, there is probably a craving for some stimulant, and tea is better than other equally accessible articles, and so it happens that many sufferers from megrim are great tea-drinkers.

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North Berwick has been praised by me as an East-Coast health-resort of the highest excellence. It was lately officially reported that there had not been a death in the district since September 24th. The town has been quite free from epidemic disease, and has been exceptionally healthy. Only thirty deaths have been registered during the year, being 11·1 per 1,000. Among the visitors five deaths occurred, of which two were sudden deaths and one suicidal. These figures confirm to the full the favourable account given of this admirable Scottish watering place.

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The following extract regarding the vital statistics of 1887 will prove interesting to readers of Health: In the past year, the births in the whole of England and Wales were equal to an annual rate of 31·5 per 1,000 of the population during the first quarter, 32·1 during the second quarter, and 31·2 during the third quarter. The deaths were at the rate of 20·6 per 1,000 per annum during the first quarter, 18·2 during the second, and 17·6 during the third. There has been no unusual epidemic. The mortality from measles was somewhat above the average during the first and second quarters, especially in Bristol, Newcastle, Leeds, Liverpool, and Sunderland; diarrhœa was exceptionally fatal during the third quarter, and caused 14,625 deaths—Preston, Leicester, Salford, and Wolverhampton suffering most conspicuously; and scarlet fever has, during the autumn, been prominently prevalent in various localities, especially London.

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On the other hand, small-pox, during the early months of the year, caused an exceptionally small sacrifice of life. In the whole country, only 30 deaths were registered during the first quarter, 47 during the second, and 70 during the third (including 45 in Sheffield). During the last few months, however, this disease has shown a tendency to establish itself in various centres. Since July last, Sheffield has suffered very severely, and the disease has extended into the surrounding districts of Yorkshire and Derbyshire. Up to December 24th, 240 deaths and some 2,000 cases had already occurred in a population of 316,000. Bristol and the adjoining districts of Stapleton and Barton Regis have also recently suffered a severe visitation; and, although London has so far escaped, the number of cases coming under notice has shown a threatening upward tendency for some weeks past.

Original Essays

"Life is not to live, but to be well."—*Martial.*

HEADACHES IN CHILDREN.

By Dr. Andrew Wilson.

The occurrence of headaches in children is a far more notable symptom and sign of health-disturbance than parents and teachers are usually inclined to suppose. In these days of educational over-pressure the "headache" has become more frequent in school-children. Indeed, the "school-headache" has come to be included among the paramount ailments of youth. Dr. W. H. Day, whose work on "Headaches" is of classic character, has of late been directing his attention to the matter which forms the subject of this article, and has embodied his views regarding the occurrence of this symptom in terse and easily-understood terms. To Dr. Day, therefore, I may acknowledge my obligations for whatever of interest this paper may be found to possess.

Headache in children, occurring at the age of from twelve to fifteen, in girls especially, when pressure of school-tasks begins to affect materially the growing brain and nervous system at large, is to be, first of all, regarded as a notable symptom worthy the attention of those in charge of youth. Dr. Day says this headache "constitutes a disease in itself, a real illness; it is sometimes so persistent," he adds, "that the child is often obliged to give up his studies in consequence." Naturally, all children are not equally affected. The nervous child is the first to succumb, because his or her balance is more easily upset. The robust, phlegmatic child, if suffering from this school-headache at all, readily recovers his tone. Rest restores the disturbed equilibrium of the nervous system and repairs the waste of nervous energy which has taken place. It is the old story, in fact, of difference of constitution and the argument for the careful observation of individual cases is, therefore, one which teachers and parents would do well to note and observe. An anxious, nervous child should have his or her tasks regulated with care, so as to avoid any excess of mental work. Strain of mind is to be utterly obviated, if the health is to be conserved.

Dr. Day has some telling remarks on this very point. He argues for the physiological study of children by teachers. I will quote his own words, to give due effect to this argument. "In every branch of the public service," says our author, "and in every profession, the competition of the entrance examinations is becoming more and more severe. This exhausts the nervous system during the most active period of physical growth, when it is so important not to overtax it. Mere cramming for a particular examination can never favour intellectual progress; it does not cultivate the reasoning and reflective powers; it is simply getting together a certain number of figures and facts which are not long remembered, and serve no useful purpose beyond the hour. To say nothing of the immediate disastrous effect of this system in encouraging excessive brain-activity in delicate

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and under-fed children, it will, in the course of time, favour a great increase in nervous diseases among the community at large. The evil seed has been sown in their youth, and when they reach maturity, and a robust constitution is indispensable for the duties of life, they will probably fail in endurance, for the push and pressure thrown upon them in early years will prevent any but the strongest discharging responsible work as it should be discharged, and will thus entail national loss. I cannot but think that the excessive strain which teachers often produce is as much caused by their want of a sound training for the work they attempt, as by their use of too ambitious a curriculum. Teachers as a body do not understand the physiological and psychological natures of children, and until they do there will always be the twofold danger of attempting too much, and of attempting it in the wrong way and by the wrong means. But I will not now enlarge upon this topic. The physician recognizes in this severe ordeal grave danger to the brain and nervous system of growing children, by which the mind is narrowed, the character weakened, and disease invited. Headache is one of the first and most persistent consequences of this baneful practice."

Coming now to the headaches of the young as a medical study, we find these to vary in character. They may be slight or severe, superficial or deep-seated; they may occupy the forehead, the top of the head, the temples, or the back of the head. The pain, says Dr. Day, may be dull or sharp, gradual or sudden, continued or paroxysmal. "These headaches may last a few hours or continue for months; they may destroy the happiness of a lifetime, and in old age depart; they may be associated with disordered sensation or disturbance of vision. Nearly all seem to owe their essential origin to disturbance in the nervous system before the vascular (or circulatory) area is involved."

But it is probably in the arrangements connected with the brain's blood-supply that the real causes of many headaches in children are to be sought and found. Let us note, in the first place, the peculiarity of the circulation in the organ of mind. Firstly, a very large supply of blood is sent to the brain; and, in the second place, the brain's blood-supply is so ordered that it is less subject to variations in pressure and generally to disturbance from the outside world than is the circulation in other parts of the frame. The blood enters the brain in very equal streams. Then, thirdly, the means for returning blood from the brain after it has discharged its duties are of special nature. The large veins, or return-channels—*sinuses*, as they are called—are scarcely capable of altering their size or calibre. They are so placed and environed by bone and membrane as to be only slightly compressible, if, indeed, they are compressible at all.

We thus note that, in respect of its blood-supply, the organ of mind is, for the most part, rendered independent of external conditions. The amount of blood in the brain must, therefore, be kept tolerably uniform in amount. At the same time it is an undoubted fact that it is subject to variations within certain limits. The heart's pulsations and the rate of breathing together vary, and this fact must be taken into account in connection with the brain's blood-supply. Within the brain is a fluid which extends downwards into the spinal cord—the *cerebro-spinal fluid*—and this latter, doubtless, in its turn, acts as a kind of "water-packing" in obviating what might prove to be the injurious effects of variations in the circulation within the head.

Following up these physiological teachings in the matter of headaches in children, we may see how, first of all, the health of brain, and, consequently, absence of headache, must depend upon the quality of the blood supplied, and also upon its due quantity. Where the supply is deficient, the brain's vitality becomes lowered; and where the quality is below par, the same result follows. Nervous ailments follow at once where even slight mental exertion is undertaken by a poorly-nourished brain; and, as Dr. Day says, "the lungs, the liver, and the bowels must be in a condition to purify the blood. These facts are sometimes overlooked in searching out the cause of headaches."

As a matter of fact, headaches in children are due usually either to excess of blood or to deficiency of blood in the brain—what are named *cerebral hyperæmia* and *anæmia* respectively. These are the two types of school-headache. Of the two, probably the headache from lack of an efficient blood-supply is the more common. We see this form of headache in the ill-nourished, poorly-fed, and badly-clothed children of the poor. The other variety of headache is, perhaps, more common among the children of the middle classes and of the well-to-do ranks of society. In the first case, the educational over-pressure acts by straining an already weakened brain, impoverished by want of food and bad air. In the second instance, the brain is over-strained through its tendency to congestion, and to over-fullness of its blood-vessels. Both sides of the question result in the same inability to enjoy either school-work or play, in fretfulness, bad temper, and lassitude. The primary remedy is the same in each case—rest from work and fresh air; while in the case of the underfed child we must attend to its due nourishment and to its clothing.

(*To be concluded.*)

PURE WATER IN COUNTRY PLACES.

By Dr. A. J. H. Crespi, Wimborne.
Late Editor of the "Sanitary Review."

No problem is more difficult than to supply pure drinking water in thinly-peopled and extremely poor districts; the expense is, of course, the main difficulty. I hardly think that townspeople are capable of understanding the obstacles to rural sanitary reform. A country landscape is so green, fertile and rich, especially in summer, that deceived by the appearance of boundless resources, and misled by the high price of land in towns, the townsman sees no difficulty. Why cannot the squire be compelled to pay £20,000? Why cannot the farmers be rated? Why not? Because an acre of rich pasture is not worth £70, and lets for £2; because the squire's whole fortune may not be more than double or treble what his yearly rental is commonly assumed to reach; because the farmer, renting a couple of hundred acres, is in receipt of a less income than that of a small shopkeeper. A wealthy tradesman, or a prosperous manufacturer or merchant, is as well off as most country gentlemen, and could buy up a dozen farmers. The fee simple of some estates would hardly rebuild and repair the cottages on them.

Rural sanitary improvements must be slow and uncertain, and must cause their promoters perplexity. I am too sensible of the difficulties to propose short cuts to the goal I have before me, although there is no reason why, extended over say twenty years, every necessary reform should not be carried out, and why the expense should, under such circumstances, be insuperable. Nay, I am convinced that with thrift and prudence, everything which sanitarians consider necessary could be managed in twenty to thirty years, and good water, commodious houses, and

the removal of dry and liquid refuse would be the rule—not, as now, the exception.

In large towns there are two ways of obtaining pure drinking water: from artesian wells—the plan tried at Leamington—and by means of water-works and reservoirs, the latter obtaining their supplies from unpolluted sources. In small towns and large villages—places with from one to three thousand inhabitants closely packed together—water is generally sufficiently abundant, and for domestic and culinary purposes unobjectionable; but it is often unfit for drinking, and its use might occasion dangerous epidemics. What is to be done? Sanitary writers seldom understand that the amount of pure drinking water required per head is extremely small. Estimates are framed setting forth that one hundred and sixty gallons a day are needed for a household, and, by a strange confusion of ideas, it is assumed that the whole of this allowance must be pure. In many cottages not a quart a day of pure water is consumed, and a gallon per house would be ample. It would not be necessary to supply a pump to every house of the poorer class; and on the average one deep well for ten or twelve would be sufficient. When cottages were near together, one tap or pump would supply thirty or forty houses, and the taps or pumps might be a hundred yards apart. Where it could be managed it would be desirable to provide every house with its own allowance, and the whole of the water used and drunk might in that case be of the best quality. How much rain water is used in the better class of houses, and does excellently for washing, that no one could bear to drink! Pure drinking water is not a commodity in much request among the poor, who find beer more to their liking. Could one give them credit for extensive reading, one might fancy that they had heard of the outbreak of enteric fever in March, 1869, at Bramham College, Yorkshire, where those inmates who drank beer escaped, while those who kept to water suffered. It is curious that though the water used for cooking purposes in that establishment was drawn from a well communicating with a polluted tank of soft water, it was not injurious, the boiling to which it was subjected destroying disease germs. Other similar instances are recorded, and are of value to the sanitarian, as they show that the poisonous properties of polluted water are neutralised by boiling.

Assuming that local authorities ought to supply or to insist on the supply of pure drinking water in sufficient quantity to every house in the district, and that, although a large outlay might in many instances be necessary, the diminution of sickness and pauperism would, in the long run, repay it many times over, the question occurs: How is pure water to be got? In some cases, depending on local conditions, the neighbouring water-courses would furnish inexhausible supplies to every house, and severe measures should be adopted to prevent pollution. Generally, rivers are too much polluted to be available; and small towns, villages and detached houses would have to depend on pumps, which answer sufficiently well. Open wells ought everywhere to be covered in or filled up; the latter would generally be wiser. Few open wells are deep enough, or situated in such places that, carefully covered from surface impurities, they could be used for drinking, although, when only required for domestic use, well water is unobjectionable.

The favourite plan in hamlets for getting water is to send children with buckets and small cans to the well. These cans are attached to a bit of string and are lowered into the odorous fluid, the water in the well may be only three or four feet from the surface. An examination of nearly all open wells long in use shows that the water is dangerously polluted, and that the situation of the shaft, its shallowness, and its nearness to houses and ashpits, make improvement impossible. The only remedy is to fill up these shallow wells, and to sink fresh shafts to a greater depth. Still better, however, are pumps, sunk at a sufficient distance from the house, and deep enough to go through the sewage-saturated soil. I see no objection to this plan, and, indeed, no other course is open in country villages, where reservoirs, water-works and costly systems of pipes for the conveyance of water are entirely out of the question, and would in some cases almost double the rents paid. To insure that the water should be abundant and pure, the depth and number of pumps would depend on the locality. In small villages a couple of public pumps would suffice; nay, in some cases, one deep pump, conveniently and centrally situated, would be sufficient.

It is found that a well or pump sufficiently deep will in the open country supply large buildings, as asylums, gaols, and orphanages, with abundance of wholesome and pure water, and many a village is less populous than one of these great institutions. Pumps cannot in a village, any more than in a town, be indefinitely increased in number; but even the most thriving country towns are sufficiently small not to tax the pumps immoderately, while in places of six to ten thousand inhabitants water-works would be cheaper and more convenient.

The conclusion is that, could we induce the poor in villages, where the abundant supply of pure water is difficult or impossible, to show common prudence and wise economy, it would only be necessary to sink four or five deep wells to supply a thousand people or more with drinking water. Polluted wells should be filled in to prevent their water being drunk, and measures could be devised to stop the pollution of running streams, the water from which, and from shallow wells not dangerously foul, might be used for culinary and domestic purposes. But, after all, who that knows the habits and small intelligence of the labouring classes—shall I add of all classes?—would expect this plan to work well? The handiest open ditch or pool, the shallowest pump or well, polluted or unpolluted, would supply all the water for domestic and drinking purposes. As things are, there is some reason in the proposal that no shallow well should be left, and no cottager should be permitted to go to any polluted or suspected stream for water. I am not sure that any scheme for supplying a village with pure water would be of practical value, unless, besides providing a sufficiency of drinking water, it completely removed the temptations to drink polluted water which might be slightly more accessible.

For washing and domestic purposes the supply of good, clean, and soft water would not be difficult were cottages properly and evenly tiled. In that case large tubs or cisterns would receive and preserve the rain water falling on the roof. At present, though matters are mending, comparatively few cottages are tiled or slated; and many which are have roofs remarkable for irregularity, and could not collect much rain. Were large villages built on elevated and suitable sites, at a distance from existing houses, on soil free from pollution, good wide streets might be cut, fringed with well-built cottages, properly tiled, drained, and ventilated. The rain water falling on the houses could be stored in cisterns or tanks for domestic purposes, and deep pumps at the corner of each street might be sunk to supply drinking water. One cannot help wishing that some benevolent millionaire, instead of giving large subscrip-

tions to twenty different hospitals, and at his death bequeathing £100,000 to wealthy and often abused charities, would build a model town on the plan of Saltaire. In a few years the statistics we should get from eight or ten little towns, containing five or six hundred good new houses apiece, would be of incalculable value to the country, and would be invaluable landmarks and guides to sanitary authorities. Till then, however, sanitary and social reforms will be slow and difficult. But in the present depressed condition of agriculture, and with the rapidly dwindling population of most rural districts, there is very little chance of rural villages being constructed on scientific principles.

Personal Health

"Be timely wise;
With health all taste of pleasure flies."—*Gay.*

HOW TO "PUT ON" FLESH AND FAT.

We hear a great deal about losing in weight, but there is not that distinction made between losing in flesh and losing in fat that there should be. Similarly, medical men are none too clear about directing their patients how to put on flesh and how to put on fat. He is the skilful physician who knows how to so manage his patients' diet as to build them up. Whatever may be an individual's tendency in health, in convalescent disease the tendency is to put on flesh and fat. This much is agreed to by all.

Now, we eat that we may live, for without food we die. As soon as the body loses two-thirds of its weight the light of life goes out. The foods that we rely on mainly are three, and are represented by—

1. Albumen, represented by meat, casein, white of egg, and gluten.
2. Carbo-hydrates, as starches, sugars, &c.
3. Fats and oils.

Albumens.—So much of the body is composed of this that it is easy to infer its importance. Without this there could be no life. "Albumen is the only food," says Bauer, "which in the presence of water and the constituents of the ash can of itself alone support the vital processes." An "excess of it is not necessarily superfluous, for functional activity and resisting power of organism are connected with ample supply of albumen." The families with momentum are the meat-eaters.

It was formerly supposed that albumen (meat) went to build up the tissues, and that starch and fats kept up the body-heat. This is now known to be a mistake. All the foods keep up the body-fire. Some foods are destroyed more readily than others, and we place them in the order of readiness with which they are used up—

1. Carbo-hydrates.
2. Albuminates.
3. The oils.

Let it be borne in mind that the albumen taken becomes first a circulating albumen, and if it is not then used up further changes into organic or tissue-albumen. The destruction of the albuminates takes place almost entirely in the circulating albumen, and not in the tissues, and this destruction goes on as freely when one is fasting as on a diet of starches and fats. Nor is it influenced by the work done, for all the albumen taken daily is wholly excreted—no more, no less.

NOTES FOR REFERENCE.

If plenty of meat, gluten, &c., be taken with fat, all the former may be used up and the fat go to increase the body-weight (*fat*).

Again, "under the influence of a suitable amount of fat, the superfluous albumen (meat, &c.) in the food is for the most part stored up as organic (tissue) albumen," and thus the *flesh* increased.

CONCLUSION.

Under all conditions of feeding, whatever you do, never abandon the administration of the albuminates. If you stop them, ere long there will be a waste of flesh. Women living on bread and tea, furnish good examples of wasted flesh and superfluous fat.

Where it is desired to get fat, take (if an invalid) cod liver oil and carbo-hydrates—preferably Kepler's Solution—but do not omit a full diet of albumen.

Where fat is interdicted (as it seldom is in small quantities), take plenty of albuminates, as meat, egg, gluten, milk, &c., with the most assimilable of the carbo-hydrates—Kepler's Malt.

By a study of the principles here evolved, what physical capability there is to fatten and put on flesh may be made the most of.

FISH AS A BRAIN-FOOD.

This subject has of late been attracting public attention. A correspondent of a contemporary journal writes as follows:—"I have read with much interest the remarks published by you to-day on the popular delusion by which a diet of fish is supposed to be conducive to development and activity of the brain. Where, indeed, are the great brain-workers who can be presumed to have lived principally or in a great measure on fish? Where is the fisherman who has ever distinguished himself except in connection with his own not very intellectual occupation? The proper brain-food is not fish, but flesh. The greatest meat-eaters are the butchers; and without referring to encyclopædia or dictionary, I can at once, out of my own limited stock of knowledge, cite several cases in which men of undeniable genius have been butchers, or the sons of butchers. Cardinal Wolsey was the son of a butcher. Shakespeare was the son of a butcher; and M. Guizot, in his "Life and Times of Shakespeare," accepts and repeats the traditional story as to Shakespeare's having been himself a butcher in his early days, and of his slaying animals with much pomp and dignity after the manner of an ancient sacrificer. Minin, the Russian warrior, who in 1612 raised a body of armed men in his native Nijni-Novgorod, and, marching at their head to Moscow, liberated that city from the Polish occupation, was by trade a butcher. Finally, in the present day, Dvorak, the admirable Bohemian composer, is the son of a butcher. Meat is evidently the proper food for men of imagination as for men of action."

Another correspondent adds the assumption "that fishermen, as 'dwellers by the sea,' must necessarily eat more fish than other people. But is that true? My own experience and observation point to the contrary. The 'dwellers by the sea' do not eat fish. The professional fisherman would rather have a pound of rump-steak than the finest fish that swims. When he eats fish at all, he eats salt cod or red-herring. Therefore all the conclusions derived from the fact—if it is a fact—that those who follow the calling of fishermen have ever been famous for brains, are entirely wide of the question, whether or not the eating of fish is good for the intellect."

The idea that fish is a food which is specially nutritive as regards the brain, is founded upon physiological

principles. Fish contains phosphorus-compounds such as are known to be intimately associated with the composition of brain and nerve. Hence, on the principle of selection of foods for the chemical compounds they contain, it is by no means a far-fetched idea that from fish the nerve-centres may obtain a due share of the substance necessary for their renewal and repair. The remarks of the first correspondent above-noted are beside the argument. Great mental culture is not surely dependent upon food alone, but depends on inherited qualities of brain, and upon many other conditions of intellectual existence and education. The second correspondent is in error in supposing that fishermen do not eat fish. As a matter of fact, they cannot in many cases afford to buy butcher meat, and therefore consume liberally of the "harvest of the sea."

While fish may be said to be not only a wholesome food and one easily digested, but also a form of diet which, as already remarked, probably contains in a high degree the special form of nourishment adapted for the nutrition of brain and nerves. People with great advantage might substitute, once or twice weekly, for the "joint" at dinner, boiled white fish. The change would not merely be pleasant but advantageous, since, on the whole, we consume far too large a quantity of flesh-food. We trust the time is far distant when white-fish, as an article of diet, will be neglected. With added fat (which it lacks), in the shape of sauce or butter, white boiled fish is a light and highly nutritious food.

THE GERM THEORY AS A SUBJECT OF EDUCATION.

By H. H. CONN.

(Concluded.)

It is not of very much value to know the simple fact that a particular disease is parasitic in its nature, unless this is made the basis of further intelligent observation. Nor does it help us any, as Dr. Hunt recently pointed out in this journal, to be able to distinguish this specific germ producing any disease if we end our observations with this discovery. It is of great value, however, to know the habits of the microbe and the conditions in which it can live, and these facts can only be discovered by the study of the microbe itself. This is the share which the biological laboratory must have in the matter. It is of course necessary to study the disease itself, and the conditions under which it propagates itself, with vigour; to study the origin of epidemics, their spread and decline; but this can only be done intelligently when we understand the nature of the organism producing it.

When we know the habits of a microbe—whether it lives in acid or alkali solutions, whether in filth or cleanliness, whether best in heat or cold, &c.—then we can successfully ask questions concerning the conditions in which the disease develops; then we can discover the history of the organism from the time it leaves the body of the sick person until it gets into a second individual and again produces its disease; then we can learn what conditions favour and what hinder the disease; then we can discover how to prevent this transference, how to kill the microbe in its passage; and then we shall have gone far toward ridding the race of our vigorous epidemic diseases. Sanitary measures need no longer be blind methods applied tentatively, but may proceed directly to the root of the disease from a knowledge of its cause. Sanitary science must indeed be founded upon the knowledge of the nature and habits of microbes.

Advance along these various lines of preventive medicine has been rapid in the last few years, and is becoming more and more so, and chiefly through the study of facts discovered in connection with the growth and distribution of microbes. Although many questions still remain unanswered, the knowledge of the parasitic nature of infectious diseases is enabling doctors and scientists together to ask intelligent questions concerning such diseases, and to search for their answers in the right direction. Until this knowledge had appeared, such questions and researches could only be made at random. In short, the knowledge collected concerning the parasitic nature of disease, and the habits of the specific microbes, is giving us hundreds of ways of fighting the diseases outside of the body, even though it has yet not been very fruitful in directing our physicians how to treat the disease when it has once vigorously attacked the body.

The importance of a general understanding of the facts connected with the discoveries in this direction cannot be overrated. Who is there, old or young, who would not be benefited by a knowledge of the source and cause of infectious diseases? Who is there who is not better prepared for life by a knowledge of what is meant by cleanliness, and why it is so desirable, particularly in time of epidemics, to keep our surroundings perfectly clean? Ought not every one to understand as far as possible where the infectious organisms are likely to be, and how they may be avoided? Indeed, is not this subject one of the many which we are beginning to recognize as desirable in our public-school teaching?

Physiology is taught now in our schools by law, but what branch of physiology can be of more value to the public than a few principles connected with infectious diseases, and the means of keeping contagion away from our doors? If physiology is to be taught in the schools, would it not be well to include in it some such principles of vital importance, instead of compelling the student to learn the names of the bones in the body? At present the public gets informed in such matters only through the uncertain medium of the press, which contains as much false science as true; and as a result it is almost impossible rigidly to enforce sanitary measures. It is needless to say that the public schools have not yet taken up the subject. Our colleges, too, ought to see that every student knows something of this matter. A few of them already realize the fact, and have made a beginning in this line. Our training-schools for nurses ought certainly to put much force upon this subject and the practical precautions connected with it.

But, after all, we must look primarily to our medical schools for teaching in this direction. Doctors will always be regarded as authorities in matters connected with health, in spite of nurses or the sayings of scientists; and it is through them that the public must receive its education. The medical schools must therefore lead in this matter. It is true that medical schools aim to teach chiefly how to cure disease, and as yet the germ theory has not materially aided in this direction. It is of

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course difficult to find time, in the already crowded course, to introduce any new subject not directly related to the cure of disease. But bacteriology is a subject too important to be neglected: it readily forms a part of pathology, and most schools do find time for a treatment of this subject.

Our medical schools are now pushing on in this direction. Two or three years ago the theory was dismissed with a word, even in our best schools; and that word was frequently one of ridicule. Now many of the leading medical schools pay considerable attention to the subject. Several of them have among their faculty special bacteriological students who give instruction in this line. A few have well-equipped bacteriological laboratories, and others are looking in the same direction. To what extent the subject is treated in the medical schools of the country in general, or in the training-schools for nurses, cannot be stated at present. Inquiries are being set on foot in this regard, the results of which will appear in some future numbers of this journal.

Rheumatic and gout nostrums contain colchicum, and it is well to keep in mind that Dr. A. H. Carter, physician to the Queen's Hospital, Birmingham, states (1) that colchicum should be avoided in all cases attended with debility and cardiac feebleness; (2) its use should not be continued for a longer period than is absolutely necessary for the relief of pain; (3) and it should be given in moderate doses, repeated at short intervals.

Police Service and Physique.—At the request of the Commissioners of Police of St. Louis, Dr. Homan undertook an exhaustive inquiry into the physical development and health of the members of the force, and the means to be employed for averting any preventable causes of deterioration. With the respective merits of the several nationalities, Irish, American, German, &c., from which that force is recruited, we here are not concerned, but the main conclusion at which Dr. Homan arrived is one of the greatest interest. He found that, evidently as a consequence of the nature of their duties, involving exposure to all weathers, and night service, pulmonary diseases were the chief cause of deterioration of health and disablement, but he considered that the tendency thereto was to a great extent, due to the neglect of exercise of the muscles of the chests by men whose previous occupations had kept these and those of the arms in active play. Comparing the measurements of recruits with those of men who had been some years in the force, and those of the same men at the time of enlistment and at the end of a year, he found in all cases a marked loss of chest expansion, to which he attached more value than to mere girth, which might be apparently increased by deposition of fat. This loss of expansive power was, in a large number of instances, accompanied by the development of *râles* and catarrhal symptoms. Acting on these indications, he recommended the adoption of systematic gymnastics, including the use of dumb-bells, clubs, &c., in addition to the manual exercise in arms, which had alone been practised previously. The results were most gratifying, the gymnastics being followed by disappearance of all the symptoms above mentioned, restoration of normal respiration, increased expansion of the chest, improved wind and speed, appetite, digestion, and general nutrition, freedom from coughs and colds, and an exaltation of physical vigour and power that was consciously felt and enjoyed by the men themselves.—*British Medical Journal.*

Healthy Houses

"A happy home must be a healthy home."—*Anon.*

THE LAW AGAINST JERRY BUILDING.

Nothing is more notorious than that the legislation intended to prevent the building of insecure and unsanitary houses is every day openly defied. In the suburbs of London more particularly, flashy houses of the flimsiest character are springing up by the hundred, and it seems to be nobody's business to interfere. At last, however, some one in authority has spoken out, and we welcome the opportunity of stating exactly how the public stands in relation to a great scandal and a grave danger.

Dr. Sykes, the medical officer of health for St. Pancras, has discovered that a vast body of dustbin refuse which had been thrown upon some waste land in Highgate New Town is being built upon; the walls of the rooms being plastered with stuff made from siftings of the same rubbish. On further examination of the houses, it was found that the drains were in direct (that is, untrapped) connection with the sewer, so that the sewer-gas escaped into the rooms. Yet the building was allowed to go on. Dr. Sykes appealed to the district surveyor, who replied that "he could not interfere." The Sanitary Committee of St. Pancras ordered "a sharp letter" to be written to the surveyor; but it does not seem to anticipate any useful result. This case may be held as typical of scores of others, in which the law becomes a dead letter through the inaction of the local authorities.

The basis of our whole system of local government for sanitary purposes is found in the Public Health Act of 1875—the outcome of the famous "policy of sewage." Under this Act, every sanitary authority is required to appoint a medical officer of health, a surveyor, and an inspector of nuisances, whom, of course, it can also dismiss on sufficient grounds. The authority is empowered to make by-laws; and it is by means of its by-laws and its officers that it is supposed to be able to perform its function as guardian of the public health. "Model by-laws" have been drawn up by the Local Government Board, and should now be in force with modifications to suit the circumstances of different localities throughout the whole of England and Wales; and these lay down a number of rules with respect to the structure of walls, foundations, roofs, and chimneys, for securing stability and the prevention of fires, and for purposes of health.

Assuming that the model by-laws are adopted in a given town or district, the following regulations are in force:—No new building can be erected on any site which has been filled up with animal or vegetable refuse: the refuse must first be excavated and removed. The whole site of any new domestic building must be properly asphalted or covered with a layer of good cement concrete, rammed at least six inches thick. The walls must be of good brick or stone properly put together with good cement or mortar, and must be of certain prescribed thicknesses according to the height. A "damp-course" must be laid in cement below the level of the lowest timbers. Every wall forming a parapet is to be properly coped or otherwise protected. No timber is to be put within nine inches of the surface of any flue or within fifteen inches of any fireplace. Provision is made for securing a sufficiency of space about buildings for the purpose of ventilation. The subsoil of the site must be drained by means of earthenware field-pipes,

which must not communicate with any cesspool or sewage-drain except through a ventilated trap. The lowest story of every building must be at such a level as will allow of the construction of a drain sufficient for effectual drainage; and the drains must consist of good sound pipes of glazed earthenware or other equally suitable material, having an internal diameter of not less than four inches, and laid in a bed of good concrete, with a proper fall and with water-tight joints. No drains are to pass under the building except when any other mode of construction is impracticable; and in that case they are to be laid at an extra depth, in a direct line for the whole distance, and completely embedded in solid concrete at least six inches thick all round. Every inlet to a drain is to be trapped, and every drain is to be trapped at its junction with the main sewer. No right-angled junctions are permitted, and the drains are to be ventilated by openings into the air. No inlet to any drain (except from soil-pipes) shall be made inside the building; and soil-pipes are to be ventilated by means of a straight pipe opening at some safe place outside. All other pipes (as from the sinks, baths, &c.) are to discharge in the open air into a channel leading to a trapped gully grating at least eighteen inches distant. Finally, there are minute regulations as to the construction and ventilation of closets, ash-pits, and cesspools.

Now, any person intending to build a house has to give the sanitary authority written notice, to deliver complete plans and sections of every floor of the building, showing the position, form, and dimensions of every sanitary appurtenance, the levels, the surrounding buildings, the lines of drainage, the details of the ventilation of the drains, and other matters. There must also be a written description of the materials to be used, the intended mode of drainage, and the means of water-supply. Before the work is begun notice of the date of commencement must be sent to the surveyor, and similar notice must be sent of the date when it is intended to cover up any drain, sewer, or foundation. If such notice is not sent, the surveyor may order any part of the building to be cut into, laid open, or pulled down. Notice must also be given of the completion of the work, and time allowed for its inspection by the surveyor. Contravention of any bye-law not only exposes the offender to heavy pecuniary penalties, but to the removal, alteration, or destruction of the whole work. Thus it will be seen that the bye-laws are intended (1) to lay down certain general rules of construction that must be observed in all cases; (2) to compel builders to submit every detail of the building to the public surveyor; (3) to secure to the surveyor the freest access to buildings at every stage of their erection, and especially at certain exceptionally important stages; (4) to veto the erection and to authorize the demolition of buildings which contravene the bye-laws.

How far is this law, apparently so comprehensive, so strict, and so workable, carried out? Are the model bye-laws, or an equally stringent set of regulations, generally adopted by the local authorities? If so, are the deposited plans and specifications of new buildings properly examined? Is the construction of them closely watched? If so, how are we to account for the thousands of death-traps which unscrupulous jerry-builders have been permitted to construct in the metropolis?

With reference to the above article, Mr. H. R. Gough, F.R.I.B.A., writes as follows:—"In your able article on this subject, you say that 'nothing is more notorious than that the legislation intended to prevent the building of insecure and unsanitary houses is every day openly defied.' Certainly, no one can gainsay this; but I venture to think the reason for such a state of things is little understood by the public. Under the Public Health Act of 1875 every sanitary authority is required to appoint a medical officer of health, a surveyor, and an inspector of nuisances; and, assuming that the model by-laws drawn up by the Local Government Board are adopted and enforced, they would go a very long way towards preventing jerry-builders erecting fever-dens. How, then, is it that the Act fails to afford that protection to the public which it was intended to do? The medical officers of health, all will admit, are a thoroughly efficient body, carrying out their duties conscientiously without fear or favour. No one can hold such office except he be a duly qualified practitioner. The same cannot be said of the surveyors. Any person, however ignorant he may be of the most elementary principles of sanitary science and construction, may with impunity call himself surveyor, architect, or civil engineer. Vast numbers do so. In very many local boards and vestries the jerry-builder and his friends are in office. What wonder, then, that the sons of such men, without the slightest technical knowledge or training, are often elected to fill the office of surveyor; or, granting that a properly qualified surveyor be appointed, is it to be considered a matter of surprise that he does not put himself out of the way to interfere with or condemn the malpractices of members of the board from whom he receives his salary? He has no central body to appeal to for support, such as the medical officers of health have, and consequently too often becomes demoralized; or, if a conscientious man, can only resign and give place to one less scrupulous.

"If the same local authorities could elect vendors of quack nostrums, chemists' shopmen, or others with even less pretence, as medical officers of health, there is little doubt in many cases they would do so; but the Legislature has carefully protected us against this evil; and efforts are now being made to ensure that hereafter no one shall be allowed to practice as an architect, civil engineer, or surveyor who has not received a proper education and passed a qualifying examination. A Bill having this object in view will shortly be introduced to the House of Commons by Colonel Duncan, C.B., M.P.; and one of its provisions is that after the passing of the Act no public authority shall appoint any one as such unless he be registered as a qualified practitioner. The Society of Metropolitan Medical Officers of Health and other public bodies strongly support the proposed measure, and are about to petition Parliament in its favour. Should the Bill become law, I venture to believe that the public will obtain a much-needed protection."—*St. James's Gazette.*

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Public Health

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SANITARY SEWAGE AND WATER SUPPLY.

By EDWIN CHADWICK, C.B.

AT the discussions last held at the Society of Arts on the sewage question, which I should have attended had my health permitted, erroneous statements were made by the supporters of the combined system, in answer to which I should then have submitted statements of experiences for their correction. At the recent sanitary congress at Vienna, and also at the congress at Bolton, erroneous statements, as I deem them, of the same tenor have been made, which I consider it to be due, in the interest of sanitary science, to endeavour to correct.

In the first place, no perception is evinced in any of them of the great distinction for sanitation of sewage which is undecomposed, and the sewage in a condition of putrefaction—of sewage which feeds fish and the sewage which kills them; of sewage which, for agricultural purposes, is wasted by putrefaction; and of sewage which is unwasted by decomposition, which has generally about a third more of power for agricultural production. Nor do they recognize the value of fresh sewage as a means of removing the popular objections to sewage farms near towns in comparison with sewage that is putrefied, nor the results of bad drainage and of internal stagnation; nor that with sewage which is fresh that there is a reduction of the evils that arise from the common high culture with solid manure. The great principle laid down by De Candolle, the highest known vegetable physiologist of the last century, verified in practical examples, and cited in our instructions—"that the future of agriculture would be in the distribution of food and water at the same time"—is neglected. The proofs are overlooked that have appeared in various examples—that whilst the yield of ordinary agriculture is as one, that of the extraordinary agriculture, the *marachere*, or market garden culture, is as three and a half, and the yield from the liquefied culture as five and more. Thus, at Croydon, on the fields irrigated with fresh manure, five cows are fed where only one was formerly. An adjacent well-conducted example gives a sixfold yield from the fresh liquefied manure culture.

It is yet extensively put about against the direct application of fresh sewage to agricultural production that, as a rule, the utilization of human excreta, either *per se* or in the form of sewage, is generally attended with very considerable loss, and that only in a very few cases has it been attended with a profit. Such statements denote very imperfect examinations, which would display the —extraneous—causes of loss from the application of the cheapest means of working. However, Prof. Corfield, in his work on the utilization of sewage, gives a table of the application of the sewage of sixteen towns, and states that, judging from the results of one year, after the repayment of capital for outlay in works connected with the sewage farm, in eleven farms out of sixteen there is a profit to the ratepayers. As respects London, that there should be any profit under the combined system adopted by the vestries, would be a matter of surprise, when it is considered that of the water distributed, full three-fifths is distributed in pernicious waste in the production of excrement-sodden subsoils; and as to the water-closets, they are commonly constructed so as to consume two or three times the quantity of water that would suffice—altogether producing an extent of dilution that must render sewage worth a little more than a fourth of its value under the separate system. At the time of our examination of the water-supply of the metropolis in 1850, it was found that, by the service of large Cornish engines of ninety-horse power, upwards of seventy thousand gallons were raised one hundred feet high for a working expense of one shilling. With the improvement recently made in steam-engines, it will be possible to raise nearly double that amount for one shilling. And why could not sewage be distributed at a like charge by the like power? As to the profits of sewage farming, tenants are not in the habit of considering that they are obliged to disclose them; indeed, they generally belittle them, from apprehended increase of their landlords' unearned increments. In the case of the tenant for the farm of the sewage of Aldershot, he gave it up because his lease was out, and because he came at the same time into an estate which demanded his immediate attention; but it was inferred at once and declared that he gave it up because it would not pay. He, however, assured me that, although the soil was of a very barren description, yet with a superior though partly putrid sewage he had made a very fair profit out of the farm of ninety-six acres through his sixteen years' lease. As to towns, take the instance of Croydon. Under the mistaken notion that the sewage can only be distributed by gravitation on lands in immediate contiguity to the town, a rent of upwards of ten pounds an acre was exacted for land of which the ordinary rent was twenty-three shillings per acre.

In almost every case storm and subsoil water has been conveyed with the sewage, diluting, and thus reducing its manurial value, and increasing its volume at the time when the rain-sodden land was least adapted for its reception.

It has recently been put forth by a chemical advocate of the combined system, and of the metropolitan system of sewerage, that farmers reject town sewage. Now, before the Committee of the House of Commons on the sewage of the metropolis—1861—a practical agriculturist came with the engagements of farmers of 20,000 acres in Essex and of 7,000 acres in Middlesex, to take sewage if it could be supplied on proper terms and conditions.

As an example of the exactions on sewage farms, it may be mentioned that one city desired to obtain some land which rented at ten shillings an acre, but the right hon. landlord exacted £4 per acre for his supposed monopoly of a site where it could be applied by gravitation. The average value of land was from twenty to thirty years' purchase, but 150 years' purchase have been charged by noble lords upon towns for the application of their sewage. In addition to such factitious charges are the excessive legal expense for obtaining the sanction of parliament for local acts for towns; expenses that would suffice for the construction of a large proportion of the really requisite works.

Where pipe distribution is used, plots of land should be tested by distribution by hand or water carts to determine its particular receptivity, and the extent of the pipeage has been largely increased, often to double the extent of what would have sufficed. And these defaults of want of skill and of competent science have been overlooked in the common allegation that sewage farms and liquefied manure farms do not pay. Nevertheless, it may be observed that although liquefied manure culture is a delicate culture, requiring the skill of the horticulturist, and is beyond the capacity of the common agriculturist, the yield of the common liquefied manure farms has

been from ten to twenty bushels per acre beyond the yield of common agriculture. One detriment to the liquefied culture has frequently been that the highly superior quality of the produce has brought from game preserves, and from extraordinary long distances, rabbits and hares which the farmers are not allowed to kill.

Insanitary chemistry only proposes to treat "raw" sewage—"crude" sewage—that is to say, putrefied sewage, with expensive and really useless disinfectants. Such chemistry speaks of utilizing the putrid sewage of 100 of the population on one acre of soil; sanitary science will now utilize the sewage of more than 150 to the population for a greatly superior agricultural production on the same area.

The people of Paris have had no experience of any condition of sewage except that of putridity, and hence are much opposed to sewage irrigation close to Paris. Even Dr. Jules Brocard, of the Academy of Medicine, who, in an able article in the *Revue des Deux Mondes*, advocates the removal of the anarchy of local administration in France, and the adoption of the principle I proposed a long time ago, of a centralization of a scientific administration for the people, in place of the centralization they now have—even he gave no exposition of the economy of using sewage which is undecomposed and fresh. He has probably seen nothing of it, and knows no more of it than the people of Paris.

It will, I expect, be found that at the present time double the expense is being incurred for disinfecting the sewage made putrid by the combined system in our metropolis by throwing away the productive power for the sustenance of some two hundred thousand cows, as would suffice for the direct application of fresh sewage to the land, and maintaining conditions which the report of Lord Bramwell's commission has declared to be "a disgrace to the metropolis and to civilization."

When stripped of factitious adjuncts, water carriage, instead of being the dearest, will be found to be the cheapest and one of the most economical methods of agricultural production. It is to be observed that all the factitious charges which have been specified—the results of bad legislation and maladministration by incompetent hands, from which, for the public protection, it ought to be removed—are usually passed over without any examination, and are presented as the natural and necessary results of sewage farming, that unavoidably render it more expensive than the prevalent ancient methods of agriculture. It is proper to note these great fallacies, and submit them for close examination, as was done by the sanitary congress for Berlin, which led to the adoption of the principle of the circulation of fresh sewage against that of stagnation and putridity; that is to say, of carrying a constant supply of pure spring water at a high pressure into every house, and into every flat of every house, and by self-cleansing house-drains and apparatus, conveying immediately away, and before decomposition can commence, the fouled water into self-cleansing sewers conveying it at once fresh and unwasted on to prepared land. This is what is being done in that city, though somewhat less perfectly, I believe, than might be, and very wastefully and slowly, as I consider, for the relief of the population. The principles of sanitation are now, I consider, so far established—as recently recited from my paper by Lord Basing, who presided at the last sanitary congress recently held in Bolton—that a capitalist might contract for the attainment of large results in the sanitary improvement of the lower classes of the population.—*Journal of the Society of Arts*

Popular Science Papers

"Blessings on Science! When the Earth seemed old,
When Faith grew doting, and our reason cold,
'Twas she discovered that the world was young,
And taught a language to its lisping tongue."

—*Charles Mackay.*

GENIUS AND MENTAL DISEASE.

By WILLIAM G. STEVENSON, M.D.

SECOND PAPER.

THE consummate skill of Shakespeare in portraying the different phases of false perception, and his power of psychological analysis, are wonderfully illustrated in the dagger-scene of "Macbeth." Intent on murder, with "courage screwed to the sticking-place," Macbeth is about to enter the king's chamber, when he is startled and dismayed by an apparition of a bloody dagger in the air. For a moment he questions the reliability of his sight, and exclaims:

"Is this a dagger which I see before me,
The handle towards my hand?"

He cannot believe the testimony of his eyes, and therefore seeks confirmation in the sense of touch:

". . . Come, let me clutch thee:
I have thee not, and yet I see thee still."

Failing to grasp the dagger, he wonderingly asks:

"Art thou not, fatal vision, sensible
To feeling as to sight?"

And then, as if reason were struggling to gain supremacy over the senses, he continues:

". . . or art thou but
A dagger of the mind, a false creation
Proceeding from a heat-oppressed brain?"

How suggestive, how replete with truth was this prophetic utterance; and yet the intensity of his mind's tension—because of the deed to be done and the vision of the instrument for its excution—still makes the terrible idea the dominating factor of his mind, and subordinates the senses to its rule! He is not yet able to entirely dispel the hallucination, and he compares the apparition to the trusted blade at his side:

"I see thee yet, in form as palpable
As this which now I draw. . . . I see thee still,
And on thy blade and dudgeon gouts of blood
Which was not so before!"

And then, as if the blood upon the dagger had, by its horrid suggestiveness, steadied his brain, Reason once more resumes her seat and denies the apparition, by asserting—

". . . There's no such thing;
It is the bloody business which informs
Thus to mine eyes."

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These false perceptions, these illusions and hallucinations, while they do not necessarily indicate any mental unsoundness, have been, however, the fruitful source of those apparitions, whether of demons, fairies, or ghosts, which have added to the credulity of man, intensified his superstitions, and made possible the organization of human error under such forms of belief as are typically illustrated by witchcraft and spiritualism.

So long as an individual is conscious that the illusions and hallucinations of his senses are unreal—merely "such stuff as dreams are made of"—the intellect is not affected; but when the false perceptions are accepted as realities, the mind itself is then involved, and a delusion or a false belief is said to exist.

A delusion may be based upon false perceptions; faulty ideas from perverted reasoning about real events, or from mental inability to distinguish differences in things.

A false belief is not, however, of itself indicative of insanity, so long as it is in harmony with the individual's common mode of thought and with the spirit of the age. This is apparent when it is remembered that witchcraft—now regarded as a delusion—was, not long since, held to be a truth; indeed, such master-minds as Bacon, Jewel, Luther, Calvin, Wesley, Blackstone, Coke, and Dr. Johnson, in accepting as a truth that which we now know was a mental epidemic of error, reflected only the universal belief of the age, and were free of any taint of insanity.

That the standard of mental health is variable because it is conditioned by race, age, environment, and circumstances, is abundantly attested by the history of the past; and this fact should be recalled in discussing the kinship of genius and madness.

The popular literature relating to genius and insanity is so meagre and fragmentary that the recent contributions by Mr. Sully, on "Insanity and Genius" and "Genius and Precocity," and by Miss Sanborn, on the "Vanity and Insanity of Genius," are as welcome as they are interesting. It is obvious, however, that names are often used to show the kinship between insanity and genius which do not represent the most illustrious minds. Mr. Sully is, however, logically correct in thus using names, for he includes under the term genius "all varieties of originative power, whether in art, science, or in practical affairs"; but in so doing he destroys, it seems to me, the value of his argument in support of the relationship of insanity and genius, for, measured by this standard, the evidence is overwhelmingly against the theory. Neither is due regard given to the real significance of false perceptions, which are often made to appear indicative of insanity, when in reality mental integrity is not impaired.

Although obliged to follow a common trend of thought with familiar illustrations, it is, nevertheless, my hope to place a few garlands of honour on the brow of Health, and to defend genius against the implication that it exists only with madness. The profound ignorance of the ancient philosophers concerning the nature of mind itself justifies us in attaching but little importance to their interpretation of its phenomena.

Thus, Plato's "Psychology" affirmed a self-existent, self-moving, and eternal soul, in form "like a pair of winged steeds. . . . In divine souls both steeds are good, in human souls one is bad. . . . Before entering the body the wings are lost which were nourished by beauty, wisdom, goodness, and all that is divine. . . . The mind of the philosopher alone has wings; he is ever initiated into perfect mysteries, and his soul alone becomes complete. But the vulgar deem him mad and rebuke him; they do not see that he is inspired. This divine madness is kindled through the renewed vision of beauty. . . . Love itself is madness."

The soothsayers, or diviners, to whom Plato ascribed the "nobler madness," were regarded mad, not only because of their wisdom, but because of their extravagant rage and noisy behaviour.

Virgil describes the inspired priestess as full of enthusiastic rage, and fiercely raving in her struggle to disburden her soul of the influence of the mighty god. Indeed, raging, foaming, and yelling, accompanied with antic motions, was the usual way of expressing the influence of inspiration or "possession."

Since Aristotle held psychological views similar to those of Plato, his saying that "it is the essence of a great poet to be mad" adds nothing to the strength of the theory.

The "madness" referred to in the conversation between Horace and Damasippus, did not specially relate to intellectual conditions, or to what we know as insanity, as has been intimated, but rather to individual and social ethics. The "Satire" says: "The school and sect of Chrysippus deem every man mad whom vicious folly or whomsoever the ignorance of any truth drives blindly on. This definition takes in whole nations; even great kings; the wise man alone being excepted. . . . Whoever is afflicted with evil ambition or the love of money; whoever is smitten with luxury, or gloomy superstition, or any other disease of the mind, . . . come near me, in order, while I convince you that you are mad. . . . Whoever shall form images foreign from truth, and be confused in the tumult of impiety, will always be reckoned disturbed in mind; . . . where there is foolish depravity, there will be the height of madness. He who is wicked will be frantic too."

I confess that, with such statements before us, it hardly seems necessary to discuss the value of ancient opinions on a subject which must be treated under the restrictions of modern definitions. We will, therefore, examine the question from the standpoint of more modern times, when the supernatural agency in insanity gives place to the deteriorating influences which unite it to other forms of nervous disease; and genius becomes a product of an age, in the expansive growth of the human mind.

That these extreme forms of mental expression are often associated, there is no doubt; and that genius is, at times, shadowed by mental disease is a fact well known; but our interest centres in the inquiry, whether this relationship is such an essential one as to justify Dryden in asserting:—

> "Great wits are sure to madness near allied,
> And thin partitions do their bounds divide."

Or Shakespeare, when he says:—

> "The lunatic, the lover, and the poet
> Are of imagination all compact."

In support of this essential union, Montaigne, Diderot, Pascal, Lamartine, and others, have subscribed their names, but in terms more general than specific, and with more rhetorical beauty than philosophic strength; while Moreau boldly affirms that genius is a nervous disease.

A Pleasant Anæsthetic is obtained by the mixture of equal parts of chloroform and eau de Cologne. This is recommended by Mr. J. Stephens, anæsthetist of the Brighton Dental Hospital, who says that the mixture is liked by ladies. It is, of course, to be used with an inhaler.

Our Bookshelf

"Reading maketh a full man."—*Bacon.*

A BOOK ON INDIGESTION.

Indigestion, Biliousness, and Gout in its Protean Aspects. (Part I. Indigestion and Biliousness.) By J. MILNER FOTHERGILL, M.D. Second Edition, revised and enlarged. (London: H. K. Lewis, 136, Gower-street, W.C.)

DR. MILNER FOTHERGILL occupies the first place among those physicians who have made the ailments of digestion and assimilation of food a special study. To the charm of clear, lucid writing, this author adds a forcible and interesting style. His books are, therefore, not mere dry treatises, fitted for the perusal of medical men alone. They combine technical with every-day details in a clever and agreeable fashion, and thus satisfy the double demand for "more light" on the problems of digestive troubles, made by the practitioner and the intelligent layman alike. Best of all, in Dr. Fothergill's works, there is no sacrificing science to demands for popular instruction. He shows the possibility—rarely attained by scientific writers—of at once placing his facts beyond dispute, and the popular interpretation of them beyond mistake. On these grounds, we may firstly say that the work before us, like others of the author's books, is a volume replete with valuable information on the subjects whereof it professes to treat.

It may not be unprofitable for the reader of Dr. Fothergill's book to turn his attention, first of all, to the Appendix. Therein the author treats of "The Failure of the Digestive Organs at the Present Time." This chapter, in one sense, contains the clue to the whole book. We live in an age when the "struggle for existence" wages fiercely in every rank and class of men, when competition for the necessaries of existence is strong, and when the weak go to the wall under a kind of unsparing and inevitable law of nature. One result of this fierce competition for means of subsistence—due, primarily, to a large overgrowth of our population—is a weakening of the nutritive powers of civilized man. The same result attends a special phase of our modern existence—the life spent wholly in great centres of industry, among bad air, bad drainage, and ceaseless nervous worry. These causes, added to errors in feeding, Dr. Fothergill points out in his Appendix, are sapping the nutritive and recuperative powers of the race. It bodes ill for a people whose nourishment has become a thing of difficulty and of pain. Hence, starting from such a proposition, the import of the author's views and teachings about indigestion may be realized. If want of assimilative power is a feature of our day, then it is nothing short of a national matter that the remedies for our failure to nourish ourselves should be clearly explained and the remedies therefor as plainly indicated.

To an introductory chapter succeeds a clear description of the process of digestion in the natural man. Herein the reader learns how the starches of the food, whereof he swallows a large amount each day, become converted into sugar by aid of the saliva of the mouth. He will appreciate next how little, relatively speaking, in bulk, but how great in importance, is the work of the stomach in digesting the nitrogenous parts of the food it receives. He will be taught how the products of early digestion are swept up into the liver, and how that great gland metamorphoses them for use in the tissues. He will see how, later on in digestion, the sweetbread or pancreas acts upon all classes of foods, and practically brings digestion to a close. Later on in the book the author will further disclose to him the complex duties of the liver, in relation to its duties as a kind of digestive policeman, guarding the entrance to the circulation from the inroads of improper visitants in the shape of food-products which might work ill in the system. Then will succeed the knowledge of the liver's action in forming that curious substance glycogen, or animal starch, and in paying this substance out in turn to the body. This is, indeed, the high merit of the book. Its author has set himself to tell the story of digestive ailments; and he begins by putting his reader abreast of the science of the day in respect of natural digestion. Upon this reasonable and solid foundation of things he then proceeds to build up the knowledge of what to do when digestion fails, and when the pangs of dyspepsia and biliousness become part and parcel of our lot.

As might be expected, Dr. Fothergill deals very explicitly with the subject of foods in relation to the aids which artificial ferments and artificial digestives may give in cases of difficult assimilation. There is a vein of deep sensible philosophy included in the chapter on "Diet and Drink." Its terms will appeal to all dyspeptics because they are so true. There is figured the case of a man whose system has "run down," who takes butcher meat three times a day, who is always having strong soups, and who "picks himself up," as the phrase goes, with wine, brandy, and other stimulants. As Dr. Lauder Brunton puts it, this man says, "I take all sorts of strengthening things and yet I feel so weak." The real truth would be expressed if he said, "*Because* I take all sorts of strengthening things I feel so weak. Here, the commonest of common errors in foods and drinks is fully illustrated. "Strong food does not necessarily involve strength," is a maxim which the suffering public have yet to learn and to understand. "A little well-digested," says our author, "feeds the blood, and from it again the tissues, better than a large meal, none of which, or very little indeed, is properly digested."

These are wise words, because they contain the gist of all rational views about diet and drink. Dr. Fothergill runs a tilt against "the present meat-eating wave of fashion," which sweeps uninterruptedly over the surface of the social sea. He is not an advocate for vegetarianism —or, indeed, any other "ism"—but pleads for the rational use of diet relatively to the wants and ailments of the individual frame. The overloaded system—overloaded by injudicious feeding—requires lighter diet than is usually prescribed. More than half the cases of indigestion are due to an overtaxing of the digestive powers. The ordinary subject of a "liver" should take fish, farinaceous foods, milk puddings and the like, and eschew largely or wholly, till he is well, the "strengthening meat" which seems to be the solitary sheet-anchor of dyspeptics. It is valuable hints of this kind which the reader will gather in plenty from Dr. Fothergill's pages. His book is full of such pieces of advice, which, as we have said, become all the more valuable because he gives his reasons for his advocacy of them.

What he says about "temperance drinks"—fluids, by the way, proved of late to be anything but non-alcoholic in nature, as a rule—and about the use of alcohol as a dietetic measure, should be laid to heart by all who are interested in questions of nutrition. He preaches that only true doctrine of the relativity of things with admirable force. The blatant orator who would brand

all men with his particular "ism," is set down at his true worth in the pages before us. "Each case requires its own regimen all through"; and this maxim is proved good and true by every consideration alike of science and of common sense.

We wish we could spare space for further criticism of this interesting volume. In our judgment, its value as a guide to healthy living is very great. It is in this light that we have so far entered into a discussion regarding its nature and its teachings. To our readers we would recommend it as a sound and safe guide relating to all matters bearing on the bodily commissariat. Those who are ill will gain healing knowledge from its pages, and those who are hale and strong will, contrariwise, be enabled to exercise, by reason of its maxims, that prevention which is incomparably ahead of any cure.

Permanganate of Potash is recommended by Dr. Hawack as a remedy for snake-bite. His mode of procedure is to inject a solution of the salt hypodermically above the seat of the wound, and apply it also directly to the injured spot. Hot fomentation should be used to cover the application, and ammonia or any alkali available administered internally also. The strength of the permanganate solution is said to be 1 in 6. This will certainly destroy the human tissue, if not the snake-poison.

Cigars and Men.—If a man smokes his cigar only enough to keep it lighted, and relishes taking it from his mouth to cast a look at the curl of smoke in the air, set him down as an easy-going man. Beware of the man who never releases his grip on his cigar, and is indifferent whether it burns or not: he is cool, calculating, and exacting. The man that smokes a bit, rests a bit, and fumbles the cigar more or less, is easily affected by circumstances. If the cigar goes out frequently the man has a whole-souled disposition, is a devil-may-care sort of a fellow, with a lively brain, a glib tongue, and generally a fine fund of anecdotes. A nervous man, who fumbles his cigar a great deal, is a sort of popinjay among men. Holding the cigar constantly between the teeth, chewing it occasionally, and not caring if it is lighted at all, are the characteristics of men who have the tenacity of bulldogs. The fop stands his cigar on end, and an experienced smoker points it straight ahead, or almost at right angles with his course.

Stomach Disorder with Flatulence.—The following formulæ, from the pharmacopœia of St. Bartholomew's Hospital, are said by Dr. T. Lauder Brunton to "work wonders" in cases of chronic gastric catarrh with flatulence—a condition frequently seen in middle-aged or elderly women, who complain of windy spasms and pain in the pit of the stomach, striking through between their blade bones":—*Gentian and Rhubarb Draught.*—Take inf. rhei, half oz.; tinct. gentianæ, thirty min.; sodæ bicarbon., ten grs.: spirit chloroformi, ten min.; aq. menth. pip. ad., one oz. Dissolve and mix. *Alkaline Draught.*—Take sod. bicarb., ten grs.; tr. aurant, thirty min.; infus. calumbæ, ad., one oz. Dissolve and mix. When given before meals, the alkali stimulates the secretion of gastric juice, while the latter is supposed to lessen the secretion of mucus. The food thus becomes more easily digested, less acid and gas are formed, and the spirit of chloroform, by acting as a carminative, enables such gas as is formed to be more readily expelled. When taken after meals, this beneficial action of the alkali is lost, and it becomes injurious rather than beneficial, except in cases where excessive acidity is developed during digestion.

Sanitary Appliances, Etc.

GLYCERINE AND CODEIA JUJUBES.

Messrs. Tylee & Boutelle, of 7, Bridge-street, Bath, send us a sample box of their Glycerine and Codeia Jujubes prepared with Syrup of Red Orange, as recommended by Dr. G. S. Mahomed, of Bournemouth. These jujubes are found to be most effective in the cure of the dry "hacking" cough which forms such a common winter ailment. The emollient and soothing influence of the jujubes is specially noticeable even in chronic cases. They are pleasant to take, the acidity of the orange compound being highly grateful to the mucous membrane of the throat. We recommend these jujubes to all who are afflicted with winter coughs and colds.

Our Letter-Box

"Conference [maketh] a ready man."—*Bacon.*

NOTICES TO CORRESPONDENTS.

All Communications for the Editorial Department (including Books for Review, Specimens of Sanitary Appliances, &c.), to be addressed to "The Editor of Health," 2, PATERNOSTER-SQUARE, LONDON, E.C. *Those intended for the Publishing Office to be sent to* Mr. A. P. Watt, The Publisher, *at the same address.*

RULES FOR CORRESPONDENTS.

Owing to the mass of letters which reaches us each week, we respectfully direct the attention of Correspondents, desiring replies in the Letter-Box Department of Health, to the following rules:—

1. All questions are answered free of charge in the columns of Health.
2. All letters must be legibly addressed to "The Editor of Health, 2, Paternoster-square, London, E.C.," *and to no other address.*
3. Questions to which answers are desired by post, are so replied to solely at the Editor's discretion. If no answer is sent by post, the query will be replied to in the "Letter-Box" columns of Health. A stamped addressed envelope must accompany all queries to which a private reply is desired.
4. Addresses of physicians and surgeons will, as heretofore, be forwarded free to Correspondents on their enclosing a stamped addressed envelope for reply.
5. Correspondents are requested to write on one side of the paper only, and to make their inquiries as brief as may be consistent with clearness.
6. From the necessity of sending Health to press early in the week, no Correspondent can be replied to in the "Letter-Box" columns in the same week in which the inquiry is received. Replies crushed out of any issue will be found in the succeeding number.
7. No Post Cards must be used in sending queries. Violation of this rule deprives the sender of the privilege of a reply.

QUERIES AND ANSWERS.

REPLIES: GENERAL, SANITARY, AND MEDICAL.

[Readers of Health will kindly note that when back numbers of the journal are desired, the letters containing such requests and stamps for the numbers should be addressed to the Publisher of Health, 2, Paternoster-square, London, E.C., and *not to the Editor.*]

B. G. F.—The following is recommended for the cure of toothache:—Cocaine hydrochlorate, sixteen grains; powdered opium, sixty-four grains; menthol, sixteen grains; althæa, powdered, forty-eight grains; mucilage of acacia, nine grains. Make into one-half grain pills and keep in a well-stoppered bottle. For use, one of these to be inserted in the hollow tooth.

Alpha.—The best filter is that made by Messrs. Howie, of Hurlford, Kilmarnock, N.B. We can cordially recommend it.

Francis F.—To make walnut pomade the following is a recipe:—The months of August and September are the best time to make stock of walnut oil or walnut pomade, and the way to make either of them is as follows (olive oil or benzoated lard may be used, as the case may be):—Take four ounces of walnut shells, and beat them along with half an ounce of alum in a stone mortar until a paste of smooth consistence results. Then digest the paste in

twenty ounces of lard or oil over a water bath until all the moisture is driven off, and the mixture has become quite clear. Then strain and add perfume—ten drops of otto of rose and half a drachm of neroli make a very nice odour.

ONYX.—Read Dr. Wilson's "Manual of Health Science," published by Longmans & Co., price 2s. 6d.

ROBERT FOSTER.—Use for your hair the following lotion;—Carbolic acid, half a drachm; tincture of nux vomica, two drachms; tincture of cantharides, B.P., two drachms; tincture of cinchona, one ounce; eau de Cologne and cocoa-nut oil, of each a sufficiency to make up four ounces. Mix. To be well rubbed into the roots of the hair with a soft sponge once or twice a day.

EVA.—Use Dr. Pierre's Eau Dentifrice as a mouth wash regularly after meals, and his Tooth Powder morning and night, and eat a charcoal biscuit after meals.

BOFFIN.—1. Dahl's Cakes (advertised in our pages) should be regularly taken by you as a remedy. 2. Bayley's Eau de Cologne is the best.

MARTIN BOX.—In your case of falling hair use the following lotion:—Solution of ammonia, half an ounce; tincture of cantharides, half an ounce; eau de Cologne, one ounce; water, to eight ounces. Mix. Rub into the roots morning and night with a soft sponge or piece of lint.

SOUTH SHIELDS.—Continue with Pulvermacher's Belt, and drink Vichy Water. As you have gained in weight and feel well, you are evidently improving. Continue your Bokŏl and Fer Bravais for a time still and you will get quite well.

BREVIS.—See advice given to "G. X." in the last number of HEALTH. A simple plan is to use Dahl's Cakes (advertised in our pages), which are an admirable remedy for constipation. If the general nutrition of the body is interfered with, shortness of stature may result.

DALKEITH.—The secondary symptoms of which you now complain, are not a continuance of your former ailment, but most probably a local inflammation of the parts. The treatment is simple—rest as much as possible, avoid alcohol till you are well, see that no constipation exists, and use a very weak injection of Condy's Fluid (a teaspoonful to a tumbler of tepid water) morning and night for a time. After your cure, brace up your system by taking Fer Bravais as a tonic as ordered to "Anxious" in last week's number.

VERITAS.—Wash the parts regularly with Bayley's Spermaceti Soap, and dust thereon afterwards Woolley's Sanitary Rose Powder. Look, of course, to your underclothing.

EDWARD R.—Rest after meals and avoid sweets and salt foods for a time. Vegetables should be well-cooked and sparingly partaken of. Potatoes should be given up for a time. Substitute Van Houten's Cocoa for tea in the morning, and try boiled milk at night. When flatulence is present take five drops of Pure Terebene on a piece of sugar. If not cured write again, enclosing stamped addressed envelope with enclosure as you propose, and we will endeavour to advise you.

LOMAS.—1. Apply a little brilliantine every morning to the roots. 2. Try Dahl's Cakes for constipation. See also advice given to "G. X." in last week's number. 3. See advice given to "Veritas" above. 4. Bayley's Spermaceti Soap, 17, Cockspur-street, Pall Mall, S.W. 5. See advice to "Bronchial" given last week.

DENTISTRY.—We have always understood such an operation is perfectly possible. Consult Mr. Goodman, 41, Ludgate-hill, London, E.C., and ask his advice.

O. C. E.—Apply to the parts the ointment ordered to "Lorna" in No. 247 of HEALTH, and take plenty of vegetables as part of your dietary. If not bettered write again.

ROBERT WILSON.—See advice given to "Veritas" in the present number for the cure of such irritation. Read, also, the pamphlet, "A Lecture to Young Men" (post free, 1s. 1d., from Mr. Renshaw, 356, Strand, London, W.C.), and note its directions regarding diet. If not bettered, write again.

NORTHUMBRIAN.—Follow out the diet-directions given in the pamphlet you have read, and take the Fer Bravais, as therein ordered. Do not take any other tonic till you have given this a fair trial. You need not be under any apprehension, as you will get quite well. Take plenty of open-air exercise.

W. J.—1. Dumb-bell exercise, like everything else, to benefit the muscles must be undertaken with reference to the individual strength and capacity. The use of too heavy weights by a feeble frame would tend, very likely, to muscular atrophy, or wasting; just as better proportioned weights would favour muscular growth. On the whole, it is safer to use lighter than heavier weights, seeing the mere acts of movement promote muscular growth, apart from weight altogether. 2. You should bear in mind that what you complain of is no disease, and the so-called lassitude experienced is only the result of nervous fancies. If you could be persuaded to neglect the symptoms altogether, they would not trouble you. Active exercise will tend to promote what you complain of, but this simply proves that these occurrences are of no consequence. They are a sign of health in reality. Simply attend to your general health, and take no heed, save when you are low in tone, when a tonic (*e.g.*, Syrup of the Hypophosphites) would do good.

L. C. M.—See and follow advice given to "Martin Box" in the present number of HEALTH. Use a soft brush only, and wash the head once a week with Bayley's Spermaceti Soap and tepid water. If not bettered after a fair trial of this remedy, write again.

JOHN F. NEAVE.—Try a course of hot salt water baths, and at bedtime give twenty grains of bromide of potash in a wineglass of water if there is much pain. The diet should be largely of vegetable nature, and little flesh-food should be taken till the pains disappear. Hot salt (dry) applied in a stocking or flannel bag to the painful parts, will often relieve the symptoms. Try also rubbing St. Jacobs Oil into the pained joints as a useful and excellent embrocation.

MADELINE.—Burroughs, Wellcome & Co., Snow-hill Buildings, London, E.C., are the makers. All druggists who are up to the times know Fairchild's Peptonizing Powders. Apply to any good chemist in London.

A. G. H.—Try the effect of removing the hairs carefully around the bald patches so as to circumscribe the ailment, and rub into the parts, morning and night, the ointment recommended to "Lorna" in HEALTH No. 247. Note effect of this treatment, which should be persevered in for a few days. Thereafter, use the stimulating lotion recommended to "Robert Foster" in the present number, which lotion should also act as a deterrent to the further spread of the ailment. If the ointment above ordered does not appear to benefit you within a few days, supplant it by the lotion. Glad to be of any further service to you.

CAPILLUS.—Apply to the French Hygienic Society, 56, Conduit-street, Regent-street, London, W., for a safe hair-preparation such as you demand. We do not approve of that you mention.

J. P.—It is useless to take any remedy to cure heartburn, so long as you do not take means to remove its cause, which rests with your food and digestion. Soda is certainly an unadvisable thing to take continuously. Avoid all salt foods, sugar, and sweets for a time, and give up taking cheese. Take each morning half a tumbler of Vichy Water (advertised in HEALTH) on rising, and in place of tea and coffee take milk to which a little plain soda water has been added. For the rest let your food be very simple, and see that you rest after your meals. A Vichy Pastille or two should be taken after your food for a few days by way of aiding your cure.

NERVOUS EXHAUSTION.

PULVERMACHER'S World-Famed GALVANIC BELTS for the Cure of NERVOUS EXHAUSTION and DEBILITY, have received testimonials from three Physicians to Her Majesty the Queen, and over Forty Members of the Royal College of Physicians of London.

The distressing symptoms of NERVOUS EXHAUSTION and DEBILITY are speedily removed by means of **PULVERMACHER'S world-famed Galvanic Belts**, which are so arranged as to convey a powerful electric current direct to the affected parts, gradually stimulating and strengthening all the nerves and muscles, and speedily arresting all symptoms of waste and decay.

Dr. VINES, Fellow of the Royal College of Physicians, writes 19th September, 1885: "Having used MR. PULVERMACHER'S BELTS for many years, in the course of medical practice, I am in a position to speak of their great value as a curative agent in cases of nervous disease or functional malady where Electricity is likely to be serviceable. I am entirely convinced of their efficacy."

Dr. C. HANDFIELD JONES, F.R.C.P., F.R.S., Physician to St. Mary's Hospital, says: "I am satisfied that MR. PULVERMACHER is an honest and earnest labourer in the field of science, and I think he deserves to meet with every encouragement from the profession and scientific men."

Dr. GOLDING BIRD, M.D., Physician, Guy's Hospital, says: "I can hardly recommend MR. PULVERMACHER'S INVENTION too strongly to the notice of my medical brethren."

For full Price List and particulars, see New Pamphlet, "**GALVANISM: Nature's Chief Restorer of Impaired Vital Energy.**" Post Free from

PULVERMACHER'S
GALVANIC ESTABLISHMENT,
194, Regent-street, LONDON, W.

TAFFY.—Your error consists in overdosing yourself with drugs. You have simply tried "everything a little and nothing long." Take our advice and give up the use of such drugs. Continue your sponge bath, and take nothing in the way of medicine save the Vin Mariani (Roberts & Co., New Bond-street, London, W.), a claret-glassful, after or before each meal as may best suit you. The Pulvermacher's Belt should certainly also be continued. We may add that mentally your cure will be accelerated by a little wholesome neglect of what at present unwarrantably absorbs a great share of your thoughts.

GEORGE FRASER.—For winter cold we advise you to try inhalations of Stern's Pumiline. Read the account of this preparation in HEALTH for last week and use the preparation as directed.

G. O. M.—1. Howie's Filter (Hurlford, Kilmarnock, N.B.) is one of the best and safest you can use. It is simple in construction and not liable to derangement. Give it a trial. 2. About twelve grains per gallon is the ordinary amount.

BORTHWICK.—Mellin's Food is that suited for a child of the age you mention. If you give common foods you will injure the infant's health.

CHARLES WRAGGE.—Try the Vin Mariani (Roberts & Co., Chemists, New Bond-street, London, W.) as a suitable tonic. Use as directed on the bottle.

A. M. P.—For the offensive breath and flatulence, we recommend you to take the following:—Carbonate of bismuth, ten grains; wood charcoal, ten grains; bicarbonate of soda, five grains. Mix. One such powder to be taken thrice daily, half an hour before meals.

SOLDAT.—Wash the skin regularly with Bayley's Spermaceti Soap and tepid water. If the skin itches, apply a little of the following lotion: Glycerine, an ounce and a half; bicarbonate of soda, one drachm. Mix. Label: "The lotion—to be used as directed."

CRUM.—Sit and rest with your feet elevated, so as to favour the return of the blood in the veins. Have the foot of your bed also elevated. Avoid constipation above all else, as this is a frequent cause of varicose veins, as also is long standing in business. You should get a surgeon to show you how the elastic bandage (Messrs. Lindsey, of Ludgate-hill, will supply one) is to be applied.

A. M. N.—There is no need for you to be so depressed. Read the pamphlet, "A Lecture to Young Men" (post free for 1s. 1d., from Mr. Renshaw, 356, Strand, London, W.C.), and follow out the rules for health given in its pages.

BEXLEY.—Try the effect of using an injection of half an ounce of tincture of the perchloride of iron, added to one pint of water. Exercise great care over your food, and over the quality of the water you drink.

SNOW HILL.—In your case guard against constipation by the use of Dahl's Cakes. You should give up using injections, and all alcohol should be given up till you are well. By attention to your general health you will soon get well.

BERTIE.—For tapeworm the following is a cure:—Take no food for eight hours; then in the evening take the following draught: Extract of male fern, thirty minims; powdered gum acacia, one drachm; peppermint water, one ounce; make an emulsion. Next morning, take a full dose of castor-oil, and about midday a large plate of mashed potatoes. The minute head of the worm is the part which requires to be brought away. Repeat the treatment if symptoms of the worm should show themselves at a subsequent period.

OLAF.—Avoid tea and coffee altogther, and try milk instead. Add to the milk a little of the Vichy Water (advertised in HEALTH) as a corrective of acidity. See that you do not take fruits or vegetables for a time, and eat a Bragg's Charcoal Biscuit occasionally after your food. Perseverance in these measures will relieve you; if not, write again.

ABRAHAM W.—1. Try wearing one of Dr. Martin's bandages (Messrs. Lindsey & Co., Ludgate-hill, London, E.C.) on the foot, or an elastic stocking. Bathing the foot in hot water, in which Tidman's Sea Salt has been dissolved, will do good when painful.

CARRIDEN.—The hot baths with Tidman's Sea Salt will do you no harm if not taken too frequently. The Cod Oil Emulsion you name might do good, and may be tried.

PETER HAY.—We have never heard of the gentleman you name. If desired, we can send you address of a reliable specialist on receipt of stamped addressed envelope. You require to consult a physician accustomed to treat diseases of the nervous system as a speciality.

B. FOX.—Our best advice to you is that you should purchase the pamphlet, "A Lecture to Young Men" (post free, 1s. 1d., from Mr. Renshaw, 356, Strand, London, W.C.), and study carefully what is said therein regarding rules for health, diet, and the use of tonics.

A HUMAN FIRE.

A FEW years ago one of the most important coal-mines in Wales caught fire. It started slowly, but soon obtained such headway that it spread through the greater portion of the entire mine. To flood it with water would extinguish the fire, but well-nigh ruin the mine. Finally it was suggested that all the entrances and vent-holes of the mine be covered, thus shutting off the supply of air. This was done, and the flames finally died out.

To compare the condition of this mine with many phases of the human system is most natural and appropriate. "Fire in the blood" is not a mere expression, it is a most serious fact. How it originates it may be impossible to say; but that it burns and rages with an increasing fury the one who is its victim only too painfully knows. "The blood is the life." It is designed by Nature to purify, strengthen, and sustain the system. It is too often made the channel through which poison and death are transported. Poisonous acids coming through the veins and arteries inflame and cause a fire, just as real as the one which existed in the mine. They burn and irritate, causing the brain to become weak and the nerves unstrung; they carry pains to the muscles, and leave agonies in the joints; they devastate the very portions of the body that most require help, and they hasten the approach of death in its most horrible form.

There is but one way by which this fire in the blood can be extinguished, and that is by shutting off the supply of these poisonous acids. The lactic, lithic, and uric acids come into the blood through the kidneys and liver, and remaining in solution, produce inflammatory rheumatism, sciatica, lumbago, neuralgia, gout, and all rheumatic fevers and affections. All these troubles are painful, most of them dangerous. To cure them the fire in the blood must be extinguished, the supply shut off. This can only be done by guarding the portals to the blood—the kidneys and liver—and no means has ever been found for accomplishing this which can equal Warner's SAFE Cure and Warner's SAFE Rheumatic Cure, taken in alternate weeks, in doses as directed on the bottles of each. These remedies act directly on the seat of the disease. They dissolve the poisonous acids, and at the same time strengthen the kidneys and enable them to throw off all the waste of the system.

No better evidence of the efficacy of this wonderful preparation can be desired than the voluntary statements of the following persons, who have suffered, and been freed from their misery by their use:—

Mrs. Edward Taylor, 48, Alvin-street, Gloucester, suffered, more or less, for ten years from rheumatic fever. She was so ill that she was unable to retain the slightest particle of nourishment, and had quite made up her mind that she must die. A friend advised Warner's SAFE Cure and Warner's SAFE Rheumatic Cure, and they were given a trial. We give the result in Mrs. Taylor's own words: "I found nothing so beneficial. Under the SAFE Cure I gained flesh and strength, and am to-day enjoying a state of health to which for many years I had been a stranger."

Mr. F. J. Lightfoot, 20, Bucklersbury, London, E.C., suffered for months from a severe attack of muscular rheumatism. He says, "I was so bad that I could walk with the greatest difficulty. I tried all kinds of embrocations, but without getting relief. I took a few bottles of Warner's SAFE Cure, which acted in a marvellous manner, subdued the pain, and I am now as well as ever."

Colonel Frank Hanley, 100, Warwick-street, Belgravia, London, S.W., says: "Gout is hereditary in our family, and I have been a martyr to it for twenty years. I have been so eaten up by this disease that I was a perfect misery to myself and everyone about me. I could get no relief from the usual methods of treatment, and my medical man finally told me to try Warner's SAFE Cure. I used some twenty bottles of the medicine; the swellings in my feet subsided, and I have not had the slightest indication of gout since."

Testimony like the above must convince the most sceptical that Warner's SAFE Cure is quite equal to all that is said of it. If you still doubt, write the parties, enclosing stamp for reply. Warner's SAFE Cure can be had of all chemists and medicine-vendors at 4s. 6d. per bottle, or of H. H. WARNER & CO., 86, Clerkenwell-road, London, E.C.

L. PRINCE.—Allow a Chlorate of Potash lozenge, or a Chlorate of Potash tabloid to dissolve in your mouth occasionally. Rest after your meals. Look well to your teeth, and use Dr. Pierre's Tooth Powder and Eau Dentifrice as a good mouth-wash.

FRANCIS GOUGH.—For flatulence, try five drops Pure Terebene (Burroughs, Wellcome & Co.'s), on a piece of sugar. Lactopeptine may be taken with your meals, and if you are wise you will avoid solid butcher-meat for a time, and take white boiled fish, milk puddings, and soups made with Brand's Beef Essence, so as to give your digestive system as much rest as possible.

FAVORITA.—The Geddes' Hemlock Bark Extract should be tried by you. As an outward application or injection for the disease you name, it is most successful. The maker's address is 249, High Holborn, London, E.C.

SCOTT'S EMULSION

OF PURE COD LIVER OIL

AND HYPOPHOSPHITES

Is three times as efficacious as the plain Oil.

It is almost as palatable as milk.

It does not nauseate or produce a loathing for food like the plain oil.

The Hypophosphites and Oil are so skilfully combined, that they are much more potent in building up flesh and strength than if taken separately, and **SCOTT'S EMULSION** is to-day the best remedial agent for the cure of

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PETER M.—If your druggist does not keep the cocaine tabloids, apply to Burroughs, Wellcome & Co., Snow-hill, London, E.C., for address of one who does.

TURBOT.—An eye lotion made by adding one grain of the sulpho-carbolate of zinc to an ounce of rose water may be used in eye inflammation. Dilute at first with an equal part of tepid water. The sulpho-carbolate of soda may be used as a gargle for sore throat, one drachm being added to four ounces of water to make the necessary mixture.

ROBERT MUIR.—Give a Menthol Plaster a trial. Apply this as directed to the painful part. Let your food be light. Avoid alcohol and all other stimulants, and take a vegetable diet for a time.

JOHN PAYNE.—For sore hands and feet, give Hippacea a fair trial. Cyclists and others praise this remedy highly in all cases of contusions, &c.

F. P. O.—Try Bayley's Spermaceti Soap; wash the parts regularly morning and night with this soap and tepid water. Internally, take fifteen drops of Fer Bravais after your meals, in water.

ROGER.—By all accounts, you seem to be well, and all you appear to require is care in diet. As regards diet, avoid pastry, salt foods, and alcohol. Take Grant's Oat Flour as a corrective to constipation, and substitute Van Houten's Cocoa for tea. Rest after your meals regularly, as a health-habit.

R. PATERSON.—Use Dr. Pierre's Dentifrice Powder and Lotion. The Eau Dentifrice is highly cleansing to the mouth and prevents tooth decay.

CECILE.—Read the very full article on how to treat "Blackheads" in HEALTH, No. 199, which may be had from the Publisher, price 2½d., post free.

PARTON.—The water you send is pure enough, but requires filtration. Use one of Howie's Filters (Hurlford, Kilmarnock, N.B.), advertised in our pages, as a simple and effective appliance.

L. L. L.—Keep the hair short; wash twice a week with Bayley's Spermaceti Soap and tepid water, and rub in each morning to the roots a little glycerine of borax. Use a soft brush only, and avoid hard combs.

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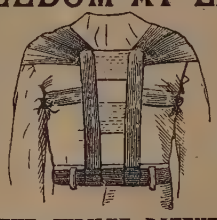
From Corsets  or Suspenders.

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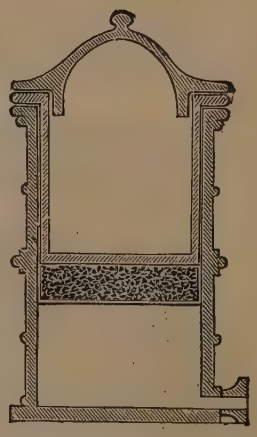

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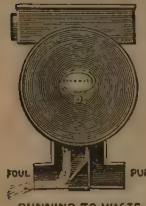

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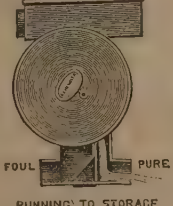

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Nurses to the Fore. By A NURSING SISTER. p. 282.
Are Cemeteries Unhealthy? p. 287.

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EDITED BY DR. ANDREW WILSON, F.R.S.E. &C.

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[The above letter, dated Sept., 1886, is from a medical gentleman in extensive practice in a large city in the North of Ireland.]

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◆ HEALTH ◆

EDITED BY

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LONDON: *FRIDAY, FEBRUARY* 3, 1888.

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Notes by the Way

BY THE EDITOR.

"Health is the foundation of all our physical happiness."—*Herder.*

WHAT are known as "hydatids" in man's liver—a dangerous disease—consist of the young stages of a particular tapeworm (*echinococcus*), which, in its mature condition, inhabits the digestive system of the dog. In Iceland, where dogs are more than plentiful, this disease was once very common. It was lessened when the medical men of the island taught the inhabitants that only by care in their habits, as regards close association with their dogs, could they escape the disease.

✣ ✣ ✣

I OBSERVE that Dr. Auguste Olliver, in a communication on the subject of the relation between the *tænia echinococcus* of dogs and hydatid cysts in man, has recently said that the number of hydatid cysts in a country is in direct proportion to the number of dogs. Facts seem to confirm this theory, for they show that there are more hydatid cysts in hill districts than in the low lands, in the country than in towns. The author cites several cases observed by him, in which the cyst was plainly traceable to previous intercourse with dogs, in patients fond of these animals. A long period, sometimes years, may elapse before the echinococcus develops itself, but the cause is none the less evident.

CHILDREN are always fond of dogs, and like to play with them, and these pets are affectionate and caressing, and have a bad habit of licking; in this way the animal's tongue may prove a ready means of propagation of the eggs of tænia. It is also possible that they may be inhaled, when, in very dry weather, these eggs are carried about by the wind. This would explain certain cysts in the respiratory organs. The penetration into the human organism, however, generally takes place through the digestive organs by means of salads, green vegetables, fruit, and other aliments imperfectly cleaned; or by water from ponds, reservoirs, or wells contaminated by dogs resorting there to drink.

✣ ✣ ✣

The author points out the precautions which should be taken to diminish the danger of propagation of this parasite: greater care in the choice and cleanliness in the preparation of certain articles of food; avoidance of unfiltered water, and particularly of stagnant water of any kind; and, above all, less intimacy with dogs, particularly in the case of children, who should be carefully watched. He condemns altogether house dogs of all kinds, as being a source of continual danger as regards the propagation of the eggs of *tænia echinococcus*. I would add that this latter remark is uncalled for. If the health of our dogs is supervised with an ordinary degree of care, and their cleanly feeding attended to, we need have no fear of infection. Otherwise, "hydatids" would be a much more common ailment than it happily is.

✣ ✣ ✣

A MEDICAL journal, under the heading "Shylock in China," says that "In the medical reports published by order of the Inspector-General of Customs at Shanghai, Dr. W. Morrison states that he was called upon to attend a young man whose eyes had been punctured because his father was unable to satisfy the claims of a creditor; on making inquiries, he was informed that the punishment was not uncommon in the district, and that death occasionally resulted. Dr. Morrison contrived to save the sight of one of his patient's eyes; the other was completely destroyed. The Chinese authorities, having had their attention called to this cruel and extraordinary practice, have expressed a determination to put a stop to it."

✣ ✣ ✣

IN last week's *Truth* the following paragraph appeared:—"There is a great fuss being made just now about the 'horrors' of the dissecting-room. It appears to have burst upon the newspaper world with surprise that when

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bodies are dissected they are, in fact, divided with knives or similar sharp instruments, and then, it seems, the pieces cannot be put together again with the exactness and neatness with which they were originally joined by Nature. No, I suppose not. Still, I do not see what is to be done. Accidents and mistakes, they say, sometimes occur, but what of that? For my part, I should not in the slightest degree mind being partly buried in somebody else's coffin, provided somebody else had a fair share of mine. Indeed, I think the practice of sewing dissected bodies together again (merely to soothe the feelings of the relatives) is a very great mistake. I understand that more wounds (resulting in blood poisoning and death) are self-inflicted in this useless sewing-up process, with the needle, than in all surgical and dissecting operations put together."

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Surely the Editor of *Truth*, equally with "the newspaper world" at large, have been made the victims of some ghastly joke. Of course, the bodies in anatomical-rooms are dissected with knives or scalpels, but in a dissecting-room the "pieces" are not put together again, no necessity existing for such a practice. Dissection is the art whereby the medical student acquires the requisite knowledge of the relations of the varied structures of the human frame. Beginning from the outside layers of the body, the student, text-book in hand, clears away carefully the various muscles, nerves, blood-vessels, and other structures, and notes their distribution and relative positions. In this way he comes to know the situation of the structures which in the living body he has to treat when they are diseased.

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The "pieces" are carefully put into coffins and duly interred. I presume the Editor of *Truth* and "the newspaper world" have been mixing up the work of the *post-mortem* room with that of the dissecting-room. In the former the body is not "dissected." Its cavities are merely opened and the internal organs examined to enable the work of disease to be traced and verified. A single incision down the middle of the body, and the cutting through of the cartilages of the ribs, suffice to expose the contents of chest and abdomen. The skull is opened by a cross-incision through the top of the head, reflecting the scalp back and front, and the bone is sawn through, so as to take off the skull-cap and expose the brain.

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When my contemporary speaks of the "useless sewing-up process," he is, therefore, confusing the dissecting-room with the *post-mortem* theatre. It would be an outrage against decency to leave a body unsewn after a *post-mortem* examination. This can be done so neatly, that no mutilation of the frame is apparent. As regards his statement that "wounds resulting in blood-poisoning and death" are frequent results of the necessary restoration of the body to a decent condition, I can only maintain that he has been grievously misinformed. Considering the thousands of *post-mortems* which are held each year, the proportion of such accidents is extremely small. With ordinary care, they can be reduced to a miserable minimum.

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I am asked to note that a public conference on the Sanitary Registration of Buildings Bill will be held at the Society of Arts, John Street, Adelphi, London, at four o'clock on Saturday, 4th February. Sir Joseph Fayrer, M.D., will occupy the chair. Admission is free, and a galaxy of distinguished men are named by way of support to the chair.

Original Essays

"Life is not to live, but to be well."—*Martial.*

A MEDICAL BATTLE.

By Dr. Andrew Wilson.

Of late days the medical profession, especially in London, has been much exercised over a sharp controversy which was started in the columns of the *Times* over the dispute between a Dr. Millican and the Managing Committee of the Queen's Jubilee Hospital. To enable my readers to understand the nature of the dispute in question, I cannot do better than quote from an article in a medical journal respecting the legal phases of the matter in dispute.

My contemporary says that "a flood of discussion has grown out of this action, which was brought by a member of the surgical staff of the Queen's Jubilee Hospital for the purpose of restraining the Managing Committee of that institution from cancelling his appointment on the ground that he had accepted an appointment on the staff of another hospital where homœopathic methods afford a recognized and optional mode of treatment. Mr. Justice Manisty, by whom the action was tried, animadverted strongly in his judgment on the course which the committee of the hospital had adopted, and we are not at all disposed to gainsay some things which the learned judge said in that connection. But for travelling into that field at all he has been rebuked by the Court of Appeal. With unmistakable emphasis the Master of the Rolls laid down that 'the Court had only to deal with the legal aspect of the case, and had to give no opinion as to the propriety, fairness, or sense of what was done by either side.' Thus cleared of polemical elements, the case affords an interesting illustration of the relations which arise between the members of the medical staff of a charitable institution and its governing body. No doubt these relations vary considerably in different institutions; but the great majority of cases must bear a strong resemblance to this one, where the post of medical officer is purely honorary, conferred by an appointment to which the appointee can hardly be said to be a party, which, therefore, is not strictly in the nature of a contract, and which, whether made for a definite period or not, is expected to operate for an indefinite time—for so long, indeed, as the medical officer continues able and willing to sustain the position.

"It is now settled, upon the authority of this case, that in these circumstances the body appointing can cancel the appointment, and apparently upon the narrowest imaginable grounds. But this remark is founded upon the judgment of the Court, not upon the facts of the case, for we do not propose to express any opinion at all as to whether the action of the defendants in this proceeding had been based on adequate or on insufficient grounds. The doctrine of the Court was thus stated by the presiding judge: 'As medical officer he would have a licence to use certain rooms and certain

Jensen's Cod Liver Oil is acknowledged as the best because it is the only Oil made from absolutely fresh Livers. It prevents all Coughs, Colds, Asthma, Bronchitis; it makes the Digestive Organs act, and is the only remedy of any value in cases of Consumption; it is sweet and pleasant—cannot by any possibility cause any aftertaste, while all its nourishing virtues are retained. Of all Chemists, &c., in bottles, each Wrapper bearing the Registered Trade Mark (an Iceberg) if genuine, at 1s., 2s., 3s. 6d., and 6s. 6d.; or, post free, of Hertz & Collingwood, 101, Leadenhall-street.

furniture in the hospital. He would have *only a licence and not an interest in the property*. It followed from that that, whether the relation between the plaintiff and the defendants was a contractual relationship or not, the relation was a strictly personal relation. Even, therefore, assuming that the defendants committed a wrongful act in putting an end to that personal relationship, the authorities were clear that the plaintiff was not entitled to an injunction. The plaintiff must bring his case within the principles upon which Courts of Equity will give such relief. Assuming, then, that there was a contract here, Courts of Equity never dreamt of enforcing by injunction agreements that were strictly personal in their nature.' And in delivering a concurring judgment, Lord Justice Fry remarked that 'enormous inconvenience would be occasioned if Courts of Equity were to enforce the continuance of strictly personal relations when those relations had become irksome, and enforced them under penalty of imprisonment for contempt of court. That would be too gross an interference with the liberty of the subject, and upon that ground Courts of Equity had refused to enforce them. The position of the plaintiff was twofold. He was a subscriber to the hospital and so a governor, and that position was not interfered with. He was also a medical officer. It was not necessary to consider whether the appointment constituted a contract with him or not. But if it did it created a purely personal relationship.'"

Dr. Millican, then, while gaining his case in the lower court, lost his case on appeal. Homœopathy, triumphant before Mr. Justice Manisty, has been defeated in the Court of Appeal. I am not concerned for the present with the special circumstances which induced Dr. Millican to ask the intervention of the law to enforce the rights whereof he believed himself in possession. The incident furnishes a text for a discussion of infinitely wider scope and bearing—namely, the relation of medical men at large to their patients in view of the special systems of medicine they may profess and practise.

On purely legal grounds, it appears to me, Dr. Millican has been ousted from his appointment on the staff of the Queen's Jubilee Hospital. That establishment is conducted, as are all ordinary hospitals and medical practices alike, on allopathic principles. Dr. Millican had accepted an appointment on the staff of a homœopathic hospital—and *hinc illæ lachrymæ*. The two systems of medicine are like iron and vegetable acids, incompatibles; and where homœopathy and allopathy meet, it is as enemies of irreconcilable nature.

The whole question of medical freedom is involved in considerations such as those to which the present action gives rise. I have, personally, no sympathy with homœopathy. I believe that system of treatment to be founded on erroneous principles, and upon data incapable of being submitted to rational scientific tests. But one feels compelled, at the same time, to enter a protest against a spirit which is abroad and apparently growing among medical men, and which arrogates to itself the powers of a final and ultimate Court of Appeal in all matters relating to the cure of disease. If there exists homœopathic ignorance, there also certainly exists allopathic intolerance. There is evinced—judging from recent utterances of the medical press—a spirit which, literally translated, means and implies that, given the veriest fool who has succeeded in passing a qualifying examination for a medical degree or licence, and the public are to be literally coerced into consulting him before and above any other practitioner who does not belong to the allopathic school.

This is medical terrorism with a vengeance. It shows itself in other directions of equally "grandmotherly" nature. People have, of late, been cautioned, week by week, against what is called medical journalism of popular kind. Various periodicals which, like this journal itself, profess to instruct the public in matters of hygiene, have been singled out as fostering quackery, because they have opened their pages to give simple remedies for simple ailments, and because they have endeavoured to diffuse a knowledge of plain health laws and hygienic rules. According to the latest development of the medical terrorism, which would equally suppress homœopathy and frighten the journalism of health out of existence, the public are being deluded and endangered on account of the diffusion of health-knowledge.

This statement may appear to be an extraordinary one, but it is more than justified by recent utterances on the part of the medical press. This latter section of journalism has apparently much to learn, and its remarks have stultified its own case. If I find a professional medical journal objecting to the replies given to correspondents in our own or similar pages, I am tempted to ask, firstly, why the said journal does not attack every work on family medicine which has of late been issued from the press. Messrs. Cassell & Co., for example, publish a bulky volume called the *Family Physician* (reviewed in the present number), wherein diseases, their symptoms and treatment, are fully described, and wherein pages of prescriptions are duly given. Are we to assume that the medical oracles are desirous of suppressing this useful volume? If not, why is the journalism which conveys precisely the same information week by week to the people, at a cheap rate, to be tabooed?

Recently I observed a criticism of certain replies given in the correspondence columns of HEALTH. This criticism appeared in the pages of a journal which, as a kind of hybrid between a manufacturing druggist's circular and a feeble exposition of medical matters, exhibited like most hybrids, the virtues of neither parent and the vices of both. The writer selected, for example, the advice given in our pages to a correspondent who complained of over-copious perspiration of the feet. We are, of course, asked to assume that in order to be cured of this simple ailment it is necessary to consult a member of the medical faculty. There is another mention of an answer to a correspondent who inquired regarding the cure of muscular pains. Again, the inference is that only in a visit to the modern medicine-man resides the sole hope of cure. We are not to be allowed even to suggest that a correspondent should wear Woollen Clothing during the winter, or take Cod Oil after meals. In a word, this is "medical terrorism" *in excelsis*, and an illustration of the grandmotherly ideas of Mrs. Partington armed with her inevitable broom.

Naturally, one is inclined to laugh at the attempt on the part of interested journalists to curb the spread of public instruction in health-science. The matter deserves no serious attention, save for the extraordinary assumptions of vested wisdom which underlie recent protests from the medical side of things. As it is, all the writing and protesting which has of late appeared and been heard on the side of medical vested interests, is of none effect. As in the case of the ecclesiastical cursing which followed the vagaries of the Jackdaw of Rheims, "nobody seems a bit the worse." The organs of professional opinion have their own special sphere and their own duties to perform. They had better leave popular health-journalism to those who understand it, and who have made it the successful thing it is. The public will

continue to judge for themselves in matters medical as in matters political. If the journals who so strenuously object to health-journalism would take the trouble to peruse the advice given to correspondents with greater care than their editors appear to have bestowed upon it, they would see that such advice is very frequently the means, not only of saving the ignorant from quackery, but also of placing patients in the way of consulting the medical men best qualified to relieve their ailments.

NURSES TO THE FORE.

BY A NURSING SISTER.

IT is strange to see the subject of nurses and nursing so prominently and practically before the public as it is now. Sentimental notices in the minor magazines, or references in novels, which display the most profound ignorance, are the usual meed of nursing life. But owing to the devotion of the Women's Jubilee Offering to the establishment of an association for supplying trained nurses to the sick poor, and the generosity of four London merchants, who have given £20,000 towards starting a National Pension Fund for all hospital officials, nurses and their work are now the talk of the day. The munificence of Messrs. Gibbs, Hambro, J. S. Morgan and Rothschild, is indeed just one of those sensible bits of philanthropy that will work good amongst us for a very long period. Women are naturally improvident and unbusinesslike. Their training makes them so; and most nurses make no attempt to save out of their small earnings. When failing health and strength assail them, they are reduced to destitution, or are dependent on private charity. Very wrong of course; but then they had no "clubs" or benevolent societies to teach them better. Now the National Pension Fund is brought before them, they will doubtless be sensible enough to avail themselves of the aid it offers.

It must be remembered that the care of the sick is work which calls for absolute devotion and self-sacrifice, and that a nurse seldom has opportunity for contemplating the future of her private affairs; besides, salaries in every branch of nursing are exceedingly small. The hospital nurse gets from £20 a year, the private nurse gets about £50, and the district nurse the same. Of nurses in military hospitals we need not speak; they are quite a separate class, and are always well cared for by the state. They regard themselves as a branch of "the service," and talk about wearing "mufti," and go to balls in full uniform with their medals pinned to their breasts. Noble women,—charming women,—and thoroughly worthy to participate in the benefits of the Pension Fund, which was started, however, specially for their humbler sisters. There was an article in HEALTH, only a short time ago, on the subject of hospital nurses, so that it is to the work done by district nurses we particularly wish to refer to-day.

In most large towns there is some sort of institution for supplying trained nurses to the sick poor, so that slight cases can be treated in their own homes, and not invade the infirmary. The nurses generally live together, under the care of a lady-superintendent, who manages the housekeeping and keeps a list of the cases that need visiting, &c. In some towns these institutions attach themselves to a special church, the vicar is then regarded as their head, and it is through him the services of the nurses can be acquired. This limits the broad influence of the institution, and the undenominational establishments certainly have a wider scope for doing good.

The new central institute which is to be founded with the Women's Jubilee Offering, will here work much good, by affiliating all small societies to one large centre, and thus giving the power and strength born of union and number. As it is, the two or three nurses alone, as it were in a large town, are too ready to fall into a narrow groove, to lose the ambition of their youth, and be content to remain at a stand-still. Books, lectures, and classes, which arouse interest amongst many, fall flat before an audience of three; and work, which is simply the daily round of unvarying visits, fills up their lives. A district nurse pays from ten to thirty visits in a day, starting on her rounds about eight in the morning. In most houses she thoroughly sees to the comfort of the patient and the cleanliness of his room. She helps to make the bed, washes the wound, or puts on the poultice; if necessary, she takes the patient's temperature and leaves a note of her observations for the doctor. The doctor, in his turn, should leave written orders for the nurse in serious cases, for directions handed down through neighbours or children are often altered beyond recognition. Perhaps, if the patient is very ill, the nurse will pay several visits in the day, or sit up all night by his bedside; but, as a rule, a nurse does not remain in her patient's house. A laughable article appeared in the *Illustrated London News*, saying that nurses could never reach the very poor, because they could not be comfortable there, and, for her own part, the writer had found that a nurse never stayed where she could not have a meat-and-pudding dinner!

Such a remarkable confounding of the duties of a district and a private nurse is indeed almost incomprehensible. We thought everyone had seen at some time or another the business-like figure of a district nurse, slipping quickly in and out of the cottages on her mission of ease and comfort. Even a district nurse may well demand a meat-and-pudding dinner after her hard day's labour; but she returns to the Home to get it; as the rules forbid her to eat in the rooms of any of her patients.

It is obvious that a trained nurse who thus visits the poor in their own homes must teach a great deal to those she tends. The subjects of ventilation, temperature, cleanliness, &c., and their relation to health are sure to be discussed, and the nurse can demonstrate to her patient how necessary are light and air to general well-being, and how greatly cleanliness and order add to the pleasures of every day life. The devotion of the Women's Jubilee Offering to maintaining a supply of efficient nurses like these, is a thoroughly worthy decision, and doubtless many would have given far more largely to the fund if they had known such would be its destination. But one part of the report of the committee betrays a pettiness which we hope is far removed from nursing life. It speaks of decorations and badges, as though nurses were dames of the Primrose League, and liked to have small jealousies and personal pride fostered in their midst—as though to be a "Jubilee nurse" with a "Jubilee medal" would cause joy in the heart of a woman whose life was passed in aiding the dying! Whatever women may be in social life, be it remembered that the nurse has deliberately left that life, and with it the trivial spirit which it so often entails. Were it not so, she would not be worthy of the charity which establishes the Pension Fund; nor worthy to work for the suffering poor.

HE—Dose hear kears am mighty dangerous, and hit's mostly de las' kear what's smashed up. She—Why don't dey leave off de las' kear, den?

Personal Health

"Be timely wise;
With health all taste of pleasure flies."—*Gay.*

RELIEVING PAIN.

OPIUM has long been known as "the gift of the gods." The objections to its use, despite its marvellous worth, are grievous and great at many times. On the one hand it is a tempter, on the other it enthralls. Aside from this its after-effects are unpleasant in the extreme. Still, to those in the agonies of pain it is a boon, but its use has been far too general, and this because its action is general. We are only just beginning to learn how to relieve pain, for which the old doctors invariably prescribed the "dream-plant."

Some two or three years ago, a new drug called antipyrin was introduced to lower the temperature in fever. Nothing more was thought of it; but it has recently been discovered that this same drug possesses in no mean degree the power of stopping pain. It will check the pain of sick-headache, facial neuralgia, shingles, lumbago, sciatica, angina pectoris, biliary and renal colic. In asthmatic complaints it has proved of value, and also in the shortness of breath occurring in bronchitis it has brought relief. The well-known therapeutist, Germain Sée, writes:—"Medication by antipyrin constitutes for all organs a real means of calming their exalted sensibility; antipyrin is the remedy for sufferers and for pain." It is customary to give it hypodermically in five to eight-grain doses, but it is often efficient when given by the month in double this dose. The Tabloids are by far the most eligible preparation to give, they are soluble, free from adulteration, and easily taken with a draught of water. In fever, very much larger doses are required.

Chloride of Ammonium is a drug of great service in chronic neuralgic troubles, and especially where these are associated, as is frequently the case, with disturbances of the liver. It is hardly realized by the profession how really valuable a drug we have in Chloride of Ammonium. Three ten grain Tabloids of it swallowed with a little water will often control neuralgic pain when all else is as useless as water. It is also most valuable for the throat, but here the tabloid should contain three grains of the drug.

In these days, when dwellers in towns are all more or less subject to gastric troubles, often of a most painful nature, it is worth remembering that for these there is nothing so useful as nux vomica. Twenty drops of the tincture in a wineglass of water, taken as the pain comes on, will check, and five drop doses three times daily will cure.

The most wonderful discovery of our time in therapeutics is cocaine. By its use any part may be rendered anæsthetic, and operations performed painlessly. A tabloid inserted into the cavity of an aching tooth will check the pain. The voice tabloids so exquisite for the throat and lungs contain a trace of cocaine.

Who has not heard of breast-pang—a disease which seems to clutch the heart as if in an iron vice? Yet trinitrine dispels the agonizing pain as if by some magic touch.

What shall we do in cancer of the breast? Here a plaster of phytolocca will bring surcease from pain. In anæmia the cure is arsenic, iron and cod-liver oil.

THE GERM THEORY AS A SUBJECT OF EDUCATION.

By H. H. CONN.

THE time is past when it is necessary to discuss the probability of the "germ theory" as explaining infectious diseases. This is no longer a theory, but as fully demonstrated as most of the other universally accepted conclusions of science. No one to-day who is competent to form a judgment from a knowledge of the facts, will doubt that many infectious diseases are caused by the growth of microscopic organisms in the body. Of course, no general proof of the parasitic nature of all infectious diseases has been adduced, nor is such general proof possible; but when the causal connection between certain specific bacteria and definite infectious diseases has, in many cases, been proved by a demonstration so conclusive as to be beyond question, and when such causal connection has been rendered extremely probable in many other cases, indeed, in almost every infectious disease, it is only ignorance of the facts that can explain any doubt as to the very general applicability of the theory.

It is true that many, perhaps a majority, of practising physicians do not have much sympathy with the conception of the parasitic nature of infection, sometimes, indeed, treating the whole subject with ridicule. Some are incapable of forming correct judgments, but most of them have not found the time or inclination to study the subject enough to know what facts have been established. At the time when most of the physicians who are now practising were pursuing their studies, the germ theory of disease was scarcely entertained as a theory, and nowhere accepted. Only three or four years ago some of our better medical schools taught their students that the theory was a wild hypothesis, and destined to be exploded, like any other visionary speculation. It is not surprising, therefore, that they should still refuse to accept a theory which so revolutionizes the conceptions of disease. But our leading physicians, including professors in better medical schools, are now convinced of the truth of the theory and the great importance of the subject, and medical papers throughout the country are giving more and more space to the subject of bacteriology. The inevitable result of this will be that the next generation of doctors will accept the germ theory as the basis of practice.

This discovery of the parasitic nature of infectious diseases is of more than scientific interest; it is of vast practical value. It has not yet, perhaps, contributed very materially to the methods of treating disease directly, although we may confidently expect great results in the future along this line. There is nothing to prevent direct experiments with germicides upon living bacteria in the laboratory, and we may hope in this way to get a more scientific method of curing infectious diseases, after the theory of their parasitic nature becomes more truly the property of doctors as well as of scientists. Thus far, however, the value of the theory has been rather as the foundation of the science of preventive medicine. Here its importance cannot be overrated, and is only beginning to become realized.

We need do no more than mention the advances made in surgery in the last twenty years, which are due almost solely to the knowledge of septic bacteria. It needs no words to enforce the value of discoveries in this line. Everyone appreciates this matter; and the value of antiseptic dressing, which alone makes the difficult operations possible, is almost everywhere recognized, and its use taught in all medical schools.

In other lines than surgery the value of the germ theory is even greater, though at first sight not quite so apparent, since the matter is yet in its infancy. The great advantage which we are to acquire through this theory is not in curing infectious diseases, but in preventing them. Professor Koch, in a recent address to a class of medical students, voiced this fact: "Gentlemen," he said, "you have been hitherto taught only how to cure disease, in the future you will be taught how to prevent disease." We can see in this direction great practical results arising along at least two different lines. The first is by preparing the body to resist the disease, the method of inoculation. The most widespread instance of this method of treatment is of course vaccination for small-pox. Vaccination was discovered, it is true, empirically, and entirely independent of the germ theory; but it finally received its *rationale* through the brilliant work and generalizations of Pasteur. Working in accordance with the same idea of preventing a severe form of a disease by giving the individual previously a mild form, Pasteur has successfully treated splenic fever and hydrophobia. Others, following in his lead, claim success in a similar treatment of yellow fever and cholera, although these claims certainly need further verification. But only a beginning has been made in this direction, and it does not seem improbable that we may see a time when many of our most severe epidemics may be as thoroughly subdued by inoculation as small-pox has been by vaccination.

But of much more importance than inoculation is the more natural method of avoiding the diseases. We are now learning to keep the bacteria away from our bodies, either by directly destroying them or by keeping away from the contaminating material. When we know the exact nature of an infectious disease—what are the habits of the organism which produces it; where they are most likely to be found lurking during epidemics, whether in water, food, clothing, drains, in the air, in the excreta or scales from the skin of the patient; in what conditions they will grow, and what will kill them; how they make their way into the healthy body, whether by food, drink, by breathing, or by contact of infected material with the skin—in short, when we understand the natural history of an infectious disease, it is usually easy to avoid it. If the disease is taken in drinking-water, it may be avoided or rendered harmless; if in food, the food may be cooked; if from excreta or clothing, they may be easily disinfected by some of the effective germicides; if by contact with the skin, care in handling the infected material, and disinfecting the skin afterward, will usually suffice.

As yet we have discovered no way of avoiding contagion which comes to us in the air, but we are just beginning to find out the extremely important fact that the air does not become contaminated with bacteria unless they are allowed to dry. Recent investigations have shown a smaller number of bacteria in the air of a well-kept sewer than in that of a poorly-ventilated schoolroom. It is a valuable discovery that this means of infection by breathing—a means which we cannot guard against—is uncommon. The air is not the ordinary mode of transference of germs, and would be scarcely at all, if proper precautions were taken to prevent infectious material from drying. Here we immediately get suggestions as to the management of the hospital and the sick-room, and as to general sanitary measures, which will enable us to stamp out many of our most dreaded diseases. How suggestive to remember the experience of Professor Koch and his associates! While at Alexandria, although surrounded by the cholera epidemic, they had no difficulty in avoiding the disease by the adherence to certain precautions which a knowledge of the germ nature of cholera had taught them; but upon return to Germany, and being thus many hundreds of miles from the disease, one of them acquired the disease by a careless handling of the cholera germs which they had brought with them. What better proof could there be of the value of knowledge of the facts? By study of bacteria, we are beginning to understand why one disease is contagious and another not contagious, or why a third disease may be sometimes contagious and at other times not at all so. We are learning what are the sure and what the worthless methods of disinfection. Thus the mysteries connected with infectious diseases are disappearing.

Turning an Honest Penny.—"Ah," said one little girl to another, "my mamma gives me a penny every morning for taking a spoonful of cod-liver oil?" "And what do you buy with the penny?" eagerly asked the second girl, in a tone not devoid of envy. "Oh," was the reply, "I do not spend it at all; mamma puts it away for me every day to buy more cod-liver oil with!"

Breathing Spaces in Towns.—Among the various projects the intention of which is to provide for the physical well-being of our population, there can be none of greater interest or importance than that which is concerned with the purity of our surrounding atmosphere. There are movements on foot for the better distribution of the pressure of work, for the suitable housing of the poor, for the supply and regulation of food in accordance with physiological necessity, and a variety of other useful purposes. None of these, however, can claim a higher title to consideration than the question which has to do with the feeding of the blood by respiration. Upon the efficiency of this process all else in the way of vital function must, of course, depend, and the question accordingly becomes a most pressing one where, as in great cities, breathing air is as far from purity as the simultaneous demands of countless overcrowded human beings and of coal-fed fires can make it. We cannot, in the face of this fact, pretend that the conditions of town life do not affect more or less injuriously the physical state of the inhabitants. Women and children suffer to a large, men to a relatively less, extent; but the fact of impaired health chiefly attributable to this cause is in numerous instances proved by the evidence of diagnostic signs. The tendency of an in-coming rustic population to frequent already congested urban districts cannot soon or easily be restrained. It will apparently continue with practically no limit for an indefinite time, and it behoves us, therefore, to do our best to provide in towns, and in all parts of them, that ready access to pure air which is so essential. For children especially, as being the embodied promise of coming generations, and as requiring almost more fresh breathing air than adults, it is most desirable to secure this boon. Fortunately, much has been done in this direction already. Among other agencies, the Association formed for the purpose of opening up vacant spaces in the metropolis for public recreation maintains an increasing activity in its useful work. Its labours are from time to time commended to public notice by the voice and pen of its energetic president, and we cannot but add to his utterances the statement of our hearty approval and support alike on grounds of rational theory and practical observation.—*Lancet.*

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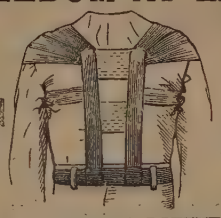

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When Faith grew doting, and our reason cold,
'Twas she discovered that the world was young,
And taught a language to its lisping tongue."
—*Charles Mackay.*

GENIUS AND MENTAL DISEASE.

(Popular Science Monthly.)

By WILLIAM G. STEVENSON, M.D.

FIRST PAPER.

It were comparatively an easy task to explain psychological phenomena by asserting, as did the metaphysicians of the past, and as some do even at the present, that the human brain—the physical sanctuary of thought—is merely an instrument through which various spiritual beings operate, producing at one time the prophetic utterances of the seer, at another time the gifted words of genius, and yet again the extravagant and discordant expressions of madness. This was the "working hypothesis" of Pagan antiquity in its efforts to explain the utterances of its oracles, and also of the Christian fathers in their attempts to explain the inspiration of the prophets and of the apostles.

Greek supernaturalism and the Christian doctrine of inspiration here found a common point of agreement, for both implied a "divine intoxication"—an "overflowing of the mind"—because of its entire possession by a divine influence, which, according as it was good or evil, excited a "poetic furor" indicative of genius, or caused a wild frenzy which was known as madness.

Genius, therefore, was simply a reflection, through the human brain, of an outside divinity of good; while insanity was merely an expression of satanic possession—an inspiration of an evil spirit—and in nature was closely allied to genius.

This belief, although somewhat modified by filtering through ages of changing thought, has been superseded only in very recent times by the conceptions which reflect the broader generalizations of inductive science. From the data thus furnished comes the conviction that mental phenomena "are dependent upon the properties and molecular activities of nerve-tissue," and that there is a "bond of union" between psychical expressions and a nervous mechanism, although the nature of this union is unknown. The facts of consciousness are marshalled before us with all the force of attested verities, but are yet veiled with all the mystery of a passing dream.

The quality of mind known as genius involves, in connection with the reasoning faculties, the special exercise of imagination in its higher creative or constructive forms; and in understanding this faculty we have an insight into the marvellous nature of genius.

It may be said that imagination is that faculty which, in its lower or constructive form, works within the limits of recollection, and transforms the materials of sense-experience into pictures of thought, and recombines them into forms of greater beauty and usefulness, while in its higher or creative form it distills therefrom truths which reason has not yet discerned, and idealizes beauties and excellences which excite our admiration and exalt our emotions.

When thought symbolizes to the mind "the forms of things unknown," it is because the imagination—leaping beyond the bounds of sensory perception—gathers from the infinitudes of unrevealed realities new truths, and thereby "gives to airy nothing, a local habitation and a name." It is thus that the intellect is able to extend the horizon of knowledge, and obtain material for the workshops of the brain.

Imagination, however bold may be its flight, is nevertheless, under the restraining influence of reason, and performs its wondrous work along true parallels of thought. Its ideals are not mere symbols of myths and fleeting shadows, but ideals which are the embodiments of eternal truths. Thus, by its sovereignty in realms where Ariadne's thread is lost from view, the imagination constructs its empire, and gives by its own methods new revelations of truth, thereby "converting all nature into the rhetoric of thought."

This, then, is the special mind-quality—the "vision and the faculty divine"—which constitutes the power of genius.

In the attempt, not to define genius, but to explain the order of its succession, Mr. Galton was led to "conclude that each generation has enormous power over the natural gifts of those that follow," and that native endowments of mind are of themselves quite sufficient to enable an individual to become "eminent" or even "illustrious."

That there is a profound principle of truth involved in the question of heredity cannot be denied, and that the factor of inheritance is the most essential of any which enters into the complex equation of mind as well as of body, is a well-established fact; but it is not the only factor which determines mental expression, nor can a complete classification of known facts be made from it alone. Heredity explains the existence of a general nervous constitution, a brain-fibre, having definite aptitudes or "organic dispositions," which are transmitted from parent to offspring, securing thereby not only a continuity, but a conservation of psychical as well as of physical properties; but the special way in which this mental aptitude shall show itself is largely dependent upon external influences or an unexplained spontaneity.

Organization limits the influence exerted by environment, while environment limits and modifies the development of the capacities of the organization.

The explanation of genius through the operation of the biologic law of heredity is very satisfactory so long as antecedence and sequence bear to each other definite and ascertainable relations; but trouble begins when the genetic record fails in its apparent unity—as when genius and mediocrity have kinship.

Whence came the genius of Phidias, which enabled him with such immortal art to create in carved ivory and fretted gold the Lemnian statue of the Parthenon and the Zeus of Olympia; whence came the power of Michael Angelo, Salvator Rosa, Leonardo da Vinci, and Rubens, to paint in matchless beauty, on canvas and in fresco, the wondrous imagery of their minds; or of Beethoven, to record in his symphonies the raptures of his soul; or of Scott, to clothe with the habiliments of life the ideals of his brain; or of Spenser, Burns, and Byron, to write with such rhythmic beauty; or of Goethe, to garnish with poetic dress the deep philosophy of his thought? In what cloudland of the past were hidden the possibilities of Dante and Milton, who made their visions of the eternal realms the subject of im-

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passioned verse—at once gorgeous in its rich tracery of thought, and sublime in its pageantry of bliss and woe? In what ancestral brain did sleep the transcendent genius of Shakespeare, that read every page "in Nature's infinite book of secrecy"; or did smoulder the giant intellect of Newton, which weighed the planets and bound with the force of gravity atoms and worlds in a bond of unity?

Such examples seem indicative of conditions powerful to modify, transform, or deflect the action of the laws of heredity, and to cause "indefinite variability" in psychological phenomena, as is done in material forms. This variability, this new psychic manifestation, is robed with the insignia of a new creation; a new species has been born into the realm of mind, displaying new and more exalted powers, but nevertheless restrained in its action by the organization which, under law, presides with such tyranny over every mental expression, and makes us, to a greater extent than we commonly think, creatures of an inexorable destiny. The contrast between the exalted ideals and grand achievements of genius, and the feeble, discordant expressions of madness, is as pathetic as it is striking. The citadel of thought has been despoiled of its most precious adornment, and in the place where once the Muses sat, mocking echoes now hold carnival, and "melancholy sits on brood."

To give a definition of insanity which shall prove acceptable to medical psychology and to practical jurisprudence, is a more difficult task than it may appear. This is because of the differences in the appreciation of causes and effects in mental phenomena which exist between minds trained in the technical details of physiological and pathological knowledge, and those who witness merely a few of the more pronounced expressions of lunacy, but are unable to trace the expressions to their relating causes.

To have even a moderate understanding of insanity, it is necessary to clearly comprehend the nature and import of "illusion," "hallucination," and "delusion"—which, when they exist, are of so much importance that some would fain have us believe that the possession of any one of these symptoms is sufficient to make genius and insanity "a little more than kin, and less than kind."

When a person sees, hears, smells, tastes, or feels an object, but perceives it to be what it is not—as when a tree becomes a man, and the murmuring wind his voice—an illusion exists; a real sense-impression is wrongly interpreted by the perceptive centres, and hence the perception does not correspond with the external object.

Hallucination originates within the brain, and is the perception of that which has no real existence; indeed, so purely subjective is it, that the senses have no agency in its production. Under conditions of concentrated attention, ideas, feelings, and sense-perceptions, are marshalled into consciousness with as great distinctness as if they were the products of external objects, rather than that of subjective conditions alone. This comes from the fact that the sense-centres are influenced by impressions received independent of their source. Its function is to transform impressions into conscious sensations, and hence an idea or emotion, when directed in a special way with persistent, concentrated force, may so impress the sensorium as to cause it to project into consciousness sensations which seem to come from objects in the external world. I cannot tell how this is done, neither can I tell how it is done when impressions come from without. The facts we know, but the secrets of transformation elude us. The brain constructs new forms, but conceals the methods of imagination by the shadow of unconsciousness.

Ajax becomes enraged because the arms of Achilles are given to Ulysses, and in his wrath he sees animals as Greeks and assails them as if Ulysses and Agamemnon themselves were before him. Talma intensified his emotions and his dramatic effect by the illusive spectres of his mind. Spinosa beheld with great distinctness the disagreeable image of his dream a long time after sleep was gone; and Niebuhr, when describing the scenes of his travels, would see all rise before him in "all the colouring, animation, and splendour of Nature." Multitudes have been at times subject to the same false perceptions; as when the soldiers under Constantine saw the cross in the sky bearing the inscribed words, "*In hoc signo vinces;*" or when the army at the battle of Antioch, excited and superstitious, saw the saints—George, Demetrius, and Theodosius—descending through the clouds of heaven to their support.

"The Force of Fancy could no Farther Go."—The effects of the imagination in sanitary matters were amusingly illustrated in connection with a little experience of the health department in Chicago. A fruit dealer made a vigorous complaint that one of his business neighbours in the same street was causing him great annoyance and loss of trade by exposing cakes of offensive cheese on the sidewalk in front of his store, and so near to the complainant's fruit that it had actually been contaminated by the disagreeable odour. Dr. De Wolf, the health officer of the city, sent an officer to the scene at once with instructions to confiscate the malodorous cheese. The officer returned in a few moments with some blocks of wood neatly wrapped to resemble cakes of cheese—intended for an advertisement only, wood being used instead of cheese itself, as boys were likely to steal them.

National Registration of Plumbers. — The first meeting of the District Council for Glasgow and the West of Scotland (in alliance with the Worshipful Company of Plumbers, London) was recently held in the Religious Institution Rooms, Glasgow. Upwards of 30 members were present, Councillor W. R. W. Smith in the chair. After the chairman had referred to the very large, influential, and enthusiastic meeting in the Trades' Hall on 9th January, the election of office-bearers was proceeded with. Councillor W. R. W. Smith, who is the chairman of the Public Health Committee for the city, was appointed president; Mr. David Thomson, F.R.I.B.A., President of the Glasgow Institute of Architects, vice-president; and Mr. Alex. M. Scott, Writer, Glasgow, Secretary. A Registration Committee of twelve was then elected, consisting of four master plumbers, four journeymen, and four public representatives, viz.:—W. P. Buchan, Wm. Cairns, Wm. Connell, and W. A. Rattray, masters; Wm. Cherry, James Dickil, Simon Fraser, and Francis McCulloch, operatives; James M. Goll, C.E., Professor Jamieson, F.R.S.E., Dr. J. B. Russell, and James Thomson, F.R.I.B.A., from the public representatives. Many of the Glasgow architects have shown great sympathy with the movement, and it is expected that they will soon sanction the employment of registered plumbers only in connection with the plumbers' work of buildings. It was intimated that now that the District Council had been instituted, a large number of both masters and men desired to apply to it for registration so soon as the application forms could be got.

Public Health

"Health is the first Wealth."—*Emerson.*

ARE CEMETERIES UNHEALTHY?

By E. G. Robinet.

If the tomb is characteristic of humanity, as Vico has said, the cemetery, M. Pierre Lafitte remarks, is absolutely necessary to all human society. It not only furnishes a more or less hygienic method of disposing of the bodies of those who are no more—it is also a fundamental institution, in the sense that it is a symbol in no way arbitrary of human continuity. The cemetery ought, therefore, in every city to be preserved and improved, as something indispensable to the intellectual and moral improvement of the people. It constitutes an interest of the first order, the care of which justifies all necessary efforts and expenditures. With a large part of the public, however, hygienic considerations far outweigh all the moral and social advantages to be derived from the maintenance of cemeteries; and, in justice to the views of this class, it is proper to inquire to what extent the existence of cemeteries, in or near a city like Paris, can be dangerous to the public health.

The injurious effects attributable to cemeteries can be exhibited only through the air, the soil, and the waters. Let us examine each of the three cases.

The air may be contaminated by the disengagement of poisonous gases, or by the propagation of miasms.

The decomposition of bodies in the earth is a real organic combination; its products are quite well known. The principal and most abundant of them is carbonic acid, a substance that is generated by the slow combustion of the carbon contained in all organic matter, vegetable or animal, whether it be a blade of grass, a leaf, wood, manure, or a dead body. It may be disengaged from the soil in cemeteries, and most hygienists have till now considered it one of the principal causes of their insalubrity. This is a mistake. We have on a recent special occasion made an approximate calculation of the maximum quantity of carbonic acid that can be produced in the cemeteries of Paris. The result of these calculations, which are based upon numerous weighings of corpses made in several hospitals and on the most authentic data of the chemical composition of the human body, show that this quantity is indefinitely less considerable than has been supposed. The total weight of the bodies consigned each year to the cemeteries in Paris is 1,389,000 kilogrammes (3,472,500 pounds). If all their carbon were transformed (which is not the case) and disengaged as carbonic acid gas, they would furnish 1,257,000 kilogrammes (3,142,500 pounds) of that gas in five years. Now, according to the calculations of M. Boussingault, we may estimate the quantity of carbonic acid produced in Paris by the respiration of men and animals and the different processes of combustion at 18,000,000 kilogrammes (or 45,000,000 pounds) in twenty-four hours. The combustion of illuminating gas alone in Paris (218,813,875 cubic metres) produced last year a quantity of carbonic acid thirty-five hundred times more considerable than all the dead buried in the cemeteries during five years could give at the maximum rate of exhalation. The Grand Opera House alone gives out every year thirteen times more carbonic acid from its gas-lights than could be disengaged from all the cemeteries put together, even if all their carbon were converted into gas.

After examining these figures, and comparing them with the very precise experiments recently made by M. Jules Reiset, Muntz, and Aubin, on the proportion of carbonic acid in the atmosphere, which go to show that the proportion of this gas in the air of Paris is no more considerable than in the country, we have a right to affirm that positively no danger to the public health exists from this source.

The truth is that most of the accidents which happen in burial-places must be attributed only to confined carbonic acid. These accidents are, moreover, much less numerous than is supposed. Different authors do not report more than twelve or fifteen cases, and the theory that cemeteries are centres of infection has been built upon this small basis. Such accidents have been attributed to "pestilential emanations, to certain subtile and deleterious gases, to unhealthy miasma," &c. In reality, the accidents noted have been caused by the carbonic acid which has settled in the pits or vaults by virtue of its superior specific gravity. The same happens much more frequently than in cemeteries, in lime-kilns, marl-pits, some cellars, fermenting vats, everywhere, in short, that carbonic acid is liable to accumulate within a limited space.

The absence of any facts relative to other gases than carbonic acid that might be disengaged in the course of cadaverous decomposition ought to have made those who are so sure of the dangerous character of cemeteries more circumspect; notwithstanding there are no such facts, these persons, besides magnifying the dangerous consequences of the liberation of carbonic acid, speak also of the no less fearful dangers which result from the generation of "certain gases and of certain violate products." Only two gases have been found to be present to an appreciable extent in the confined air of mortuary vaults, or in the atmosphere immediately surrounding a body in decomposition—as, for instance, within the enclosure of a leaden coffin. These two gases are poisonous when breathed in a certain quantity; they are ammonia and sulphuretted hydrogen, forming, when they combine, sulphohydrate of ammonia. The most delicate re-agents disclose no trace of these gases in the free air, nor even in the atmosphere of the cemeteries of Paris, although such tests often, when applied in the same manner, indicate their presence in water-closets, sinks, cellars, and sewers. In the absence of ammonia and sulphurretted hydrogen, we might (though no one has yet done so) imagine the presence of the ptomaines, those alkaloids of dead bodies recently discovered by Prof. Selmi. We anticipate this accusation, by observing that the presence of ptomaines

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"Isabella Thwaites."

in the open air has never been detected. It has been proved that they are not always poisonous; and they exist only in inconsiderable quantities. So far as is known, the ptomaines may be simply resultants of the transformation of other principles during extraction, for "they sometimes exhale a perfume like that of certain flowers, as the orange or wild rose, and of certain aromas," odours which it is well known are not found among those of cadaverous putrefaction. Moreover, these alkaloids, according to Selmi, are readily decomposed in contact with the air. The ptomaines, then, cannot enter into account in establishing a noxious character for cemeteries.

Assuredly these are miasms. We do not mean by this term those famous entities by which populations have been struck with terror, but those infinitely small, inferior organisms, the microbes, whose existence cannot be disputed after the brilliant investigations of contemporary micrographs, especially those of M. Pasteur. We have no disposition to ignore the existence of four or five species of microbes, the destructive effect of which appear to be well established, such as the anthrax-bacteria, the septic vibrio, Obermeyer's spirilli, the micrococcus of the hen cholera, and some other less well-known bacteria. But, without denying that the air may convey infectious germs, and that these may penetrate into the human organism through various channels of absorption, facts which have become almost classical, we still have to examine whether cemeteries, more than other places, give rise to these miasms, these legions of microbes, whose presence in considerable numbers in certain places, notably in hospital-wards, is incontestable.

A number of well-established facts go to prove that the different germs are destroyed by the combustion of corpses in the earth as soon as putrid fermentation begins. We cite the characteristic fact of the disappearance of the carbuncular virus in the bodies of animals that have died of the plague sore from the moment the body begins to putrefy (Pasteur, Colin), a fact which is practically recognized by all the horse-killers, who are aware that infected subjects shortly after death cease to be dangerous to them. A more important fact is, that the very exact micrographic researches undertaken by M. Miquel in the cemeteries of Paris have certainly shown that there do not exist in them any centres specially productive of germs of cryptogams. This learned physician has ascertained, contrary to the opinion of many authors, that the vapour of water which arises from the soil, from rivers, and from the masses in active putrefaction, is always micrographically pure—that is, it contains no microbes; that the gases proceeding from burial matters in decomposition are always free from bacteria; that even the impure air which is caused to pass over putrefied meats, instead of being charged with microbes, becomes fully purified, on the single condition that the infectious and putrid filter is in a condition of humidity comparable to that of the ground at about a foot below the surface. Finally, none of the numerous species which M. Miquel has isolated and inoculated upon living animals has shown itself capable of determining pathological troubles worth mentioning. After this, we may with perfect security put aside those pretended miasmatic emanations, those mysterious effluvia with which certain hygienists have gratuitously frightened an inexperienced public, and which some speculators have turned to good account for themselves.

Regarding the extent to which the soil is affected in consequence of burials, we are in possession of exact and well-established facts. The time required for the earth fully to transform organic matter that may be buried in it varies according to the physical and chemical nature of the soil; in some grounds bodies are, we might say, devoured in a few days; more commonly the time required to transform a corpse is estimated at from five years, as in Paris, to twenty years as at Geneva, and even more in some places. Authors also differ respecting the time needed for the operation; Gimelin and Wildberg believed that it takes thirty years, while Maret thought that three years are enough.

Legislation based on this point has designated a variety of periods after which burial grounds may be used over again. At Frankfort, thirty years is the standard; at Leipsic, fifteen years; at Milan and Stuttgart, ten years; at Munich, nine years. Generally, the time necessary for a complete destruction of the body is estimated in France at five years; but this limitation is not at all absolute, and in many cases burial grounds may be used anew before that time. In the majority of the experiments made by them, Orfila and Lesueur found that bodies were reduced to skeletons at the end of fourteen, fifteen, or eighteen months. After that time the soil, under the vivifying influence of oxygen, resumed its original qualities.

On this point, we may assert, contrary to certain affirmations, but in accordance with experiments, the importance and value of which are guaranteed by the name of the author, M. Schutzenberger, that, so far as the cemeteries of Paris are concerned, no saturation of the soil, either with gases or with solids, exists. The recent experiments of this chemist have resulted, in effect, in showing that the soil in the Parisian cemeteries is still in a sufficiently favourable condition as to its composition to effect the absorption of the gases and the complete transformation of the solid and liquid matters resulting from the putrefaction of the bodies that may be buried in them. The analysis, so far as it refers to gases, at least, has given identical results with the analyses of good arable lands. Moreover, there is nothing to prevent the modification of the soil of cemeteries, by means of suitable applications for augmenting the intensity and rapidity of its combustible force. Such applications are certainly not beyond the means of modern agricultural chemistry.

No important instance of the contamination of waters has been established against the cemeteries. Cases of an exceptionally unfavourable influence of a mass of decomposed matter on certain waters may occasionally occur, but none such have been established in the soils of Paris, and those which have been described in other places are not conclusive. What, on the contrary, most evidently comes out after a study of the facts is the remarkable purifying power that the earth possesses. It would take too long to give here the proof that water is not infected by cemeteries; we mention only the case of the well in the cemetery of Montparnasse, the water of which is shown by chemical analysis to be of excellent quality.

With respect to the inferior organism which some persons believe may be conveyed away by water that has traversed the soil of cemeteries, we may say that M. Pasteur has shown that the waters of springs issuing from the ground even at a slight depth, are so destitute of germs that they cannot fertilize the liquids which are most susceptible of change. Such waters, says M. Pasteur, "are at the base of lands which have been traversed incessantly for centuries by streams, the effect of which has been constantly to cause the finest particles

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WHY AM I SO MISERABLE?

SO weak and languid? Why such heartburns and pains in the stomach, such acidity, and such an unpleasant taste in the mouth? Why at times such a gnawing appetite, and then again such disrelish for food? Why is the mind so frequently irritable, desponding, melancholy, and dejected? Why does one often feel under the apprehension of some imaginary danger, and start at any unexpected noise, becoming agitated as though some great calamity was impending? What is the meaning of these dull, sick headaches; these violent palpitations of the heart, this feverish restlessness, these night sweats; this disturbed and dreamy sleep which brings no refreshing rest, but only moanings and mutterings, and the horrors of the nightmare?

The answer is: These are but the symptoms of Indigestion or Dyspepsia—the beginning and the forerunner of almost every other human disease. Indigestion is a weakness or want of power of the digestive fluids of the stomach to convert the food into healthy matter for the proper nourishment of the body. It is caused most frequently by the irregularity of diet, or improper food, want of healthy exercise, and pure outdoor air. It may be induced by mental distress—the shock of some great calamity. It may be, and often is, aggravated and intensified, if not originally brought on, by exhaustion from intense mental application, of physical overwork, domestic troubles, anxiety in business, or financial embarrassment. If the stomach could always be kept in order, death would no longer be a subject of fearful anxiety to the young and middle-aged, but what would be contemplated by all as the visit of an expected friend at the close of a peaceful and happy old age. However, the first hostile invader upon the domain of health and happiness is Indigestion.

Is there any relief, any remedy, any cure? That is the question of the suffering and unhappy dyspeptic. What is wanted is a medicine that will thoroughly renovate the stomach, bowels, liver, and kidneys, and afford speedy and effectual assistance to the digestive organs, and restore to the nervous and muscular systems their original energy.

Such a medicine is happily at hand. Never in the history of medical discoveries, evidenced by a dozen years' thorough test, has there been found a remedy for Indigestion so speedy, so sure, and so surprising in its results as Seigel's Curative Syrup; but to-day it is a standard remedy for that almost universal affliction in every civilized country in Europe, Asia, Africa, and America. Public testimonials and private letters from military officers, bankers, merchants, ship captains, mechanics, farmers, and their wives and daughters, alike confirm its curative powers.

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of the superposed soils to descend to the springs. The latter, in spite of these favourable conditions for polluting them, remain indefinitely of a perfect purity, a manifest proof that a certain thickness of earth arrests all the finest solid particles."

The wells in Paris being hardly ever used, they ought to be infected by the nitrates which, supposed to be introduced into them, are not drawn from them. It is, however, far from being proved that the cemeteries contribute materially to the excess of nitrates in the well-waters, for the analyses we have made show no sensible difference from those which were made by M. Boussingault twenty years ago. The mean quantity is the same, and our partial results show sometimes a little less, sometimes a little more, saltness than those of M. Boussingault. Now, people have continued to bury, and the ultimate products of decomposition have become more and more soluble; and, if the excess of nitrates that has been observed was due to the cemeteries, it would of necessity have increased.

Besides the precise points which we have reviewed, more general and indeterminate accusations are made against the cemeteries. Such charges are connected with the prejudice, often ill-founded, under the influence of which we *a priori* attribute injurious properties to everything that smells badly. This error arises in part from the repugnant associations which are commonly attached to the substances and places from which bad smells emanate; but, while we admit that effluvia which offend the sense of smell are not agreeable, it is not true that such emanations are generally injurious to the public health.

The facts of this order, which have long served as the foundation of the accusations directed in the name of hygiene against the cemeteries, date from the last century, when chemistry and hygiene were still in the rough. No modern observation enforces them. On the contrary, contemporary scientists, who have studied the effects of animal putrefaction, are almost unanimous in regarding it as innocuous. Such is the opinion of the most authoritative modern authors, Dr. Warens, Bancroft, Andral, Parent-Duchatelet, and, more especially with reference to cemeteries, Professors Depaul and Bouchardt.

It is hardly necessary to mention that a number of occupations expose those engaged in them to putrid exhalations, without producing injurious results upon them. Thus, soap-boilers and chandlers are known to enjoy excellent health, and not to be subject to fevers or epidemic affections, notwithstanding they often use fat in a very advanced stage of putrefaction (Tardieu). Tanners and curriers are neither more frequently nor more seriously ill than other men, aside from the occasional carbuncular affections they may acquire by real and direct inoculation, although they are often obliged, especially in summer, to work upon hides that are green with putrefaction. The same may be said for scavengers. The gases which, confined in pits cause asphyxia, bring no disease upon the men when a sufficient quantity of atmospheric air is present with them. Grave-diggers, instead of being more subject than other men to febrile, contagious, or epidemic diseases, have always been supposed to enjoy a certain immunity against them. Examples illustrating this principle are not wanting. A long catalogue of them might be cited without any trouble except to the reader, to whom the reiteration would be tedious.

In conclusion, it may be affirmed that, to the present day, not a single instance of positive noxious infection has been laid to the charge of the cemeteries of Paris. We are in a situation, therefore, to reassure the public on this point, and to deplore with the illustrious Fourcroy "the abuses which certain persons have made of the discoveries in physics and chemistry, taking advantage of them to magnify its effects on the neighbouring residences."

Let us say, if we have not the courage to support it, that the spectacle of death ought to be hidden from our sight, that in our life of feverish industrialism we have no time to spare for the dead; let us even acknowledge that we have speculative reasons for desiring to remove the burial grounds from Paris; but let us stop invoking science, let us stop invoking hygiene; let us stop asserting that cemeteries are real centres of infection, that they are susceptible of developing the germs of the gravest maladies; let us stop frightening the ignorant public with sonorous words and phrases. It is easy enough to say and repeat that cemeteries are a source of dangerous emanations, but assertions are not proofs.

Our Bookshelf

"Reading maketh a full man."—*Bacon.*

A FAMILY MEDICAL GUIDE.

The Family Physician (New Edition). (Messrs. Cassell & Co., London. 1888.)

On the first appearance of this large and excellent work we expressed our high opinion of its merits in these pages. We are gratified to note its re-publication in volume-form, and in an enlarged shape. A section on "Massage" has been added to the work, while in its other details it has been again carefully edited and brought thoroughly up to date. We have no hesitation in endorsing the opinion that "The Family Physician" is the most complete book of medical reference which exists at the command of lay readers. Its excellence depends on various notable features. In the first place, it is written by medical men of high standing, the exactness of whose work is guaranteed, and the correctness of whose opinions is above dispute. In this light alone, the book is an authoritative manual of medical treatment.

In the second place, there is no suspicion of quackery in its pages. The reader is treated as an intelligent mortal, and in this rational view of matters the writers explain the details of their subject, giving reasons for the views expressed, and making their various subjects clear to the comprehension of the public. In the third place, the work is excellently printed, and its subjects are conveniently arranged, while a capital Index renders reference to any topic easy and exact. In the fourth and last place, the book is one from which a vast amount of general health-information may be gained. The basis of all rational living is a knowledge of the laws of health, and, in another sense, such knowledge forms the foundation of proper ideas regarding the treatment of disease. On these grounds, then, we commend this volume to our readers, in the fullest confidence that they will find it all that it has been described.

The publication of "The Family Physician," both in its serial shape and in volume-form, raises anew the old question of medical monopoly, which has, of later days, been agitating the minds of medical journalists. The appearance of a volume such as that before us, giving to the intelligent reader a knowledge of the symptoms of disease, and of the means of treatment, is the best protest against

the irrational idea that the public are not fit to be trusted with a medicine-chest. It is quite true that the diagnosis and treatment of complex and serious ailments is a matter for the medical man alone—assuming, what is not invariably the case, that he is an intelligent, well-educated, and progressive practitioner. But to maintain that for the simpler ailments of life there is to be no home-treatment, no attempt on the part of the people to instruct themselves in domestic medicine, is to relegate all our education and all our progress in health-knowledge to a state of matters resembling the condition of the Dark Ages of history. Popular medicine may, in truth, be abused, but so also may professional medicine be reduced to the level of wretched charlatanism. There is room enough, and work enough, in the world for both medical men and public teachers of health-laws. The work of the latter will be materially assisted by the volume we have just noticed.

A BOOK ON PHYSIOLOGY.

An Elementary Text-Book of Physiology. By J. McGREGOR ROBERTSON, M.A., M.B., &c. (London: Blackie & Son. 1888.)

THIS handy volume is adapted to the requirements of those who enter for the examinations in physiology held under the auspices of the Science and Art Department. As such, it will certainly serve the purpose of students entering for the elementary and advanced stages of that competition. The amount of information given in this work, however, is exactly that we should like to believe was possessed by the public at large. As a public text-book of the science, for people who are "wanting to know" about the functions of their frames, this work will discharge a useful place in the literature of the subject. It is clearly, and in many parts popularly, written; and this fact alone should commend it to the notice of lay readers. Its illustrations are for the most part apt and clear—a desirable feature in any scientific manual. This, in short, is a book which an intelligent boy or girl will read and understand with ease; and it is also one which "children of a larger growth" may peruse with intellectual profit. Higher praise it is not necessary to bestow on any volume having an educational aim as the reason of its existence.

CHILDREN AND THEIR PHYSICAL HISTORY.

The Children: How to Study Them. A Course of Lectures. By FRANCIS WARNER, M.D. (London: Francis Hodgson, 89, Farringdon Street, E.C. 1888.)

DR. WARNER'S lectures were delivered at the request of the council of the Fröebel Society, and in their present form are intended to appeal to all who are in any way interested in studying the physical and mental development of children. It is probable we have not yet reached that phase of educational perfection when the exact determination of the phases of childhood and their meaning is regarded as the foundation of all educational care and science. Dr. Warner's book is a plea for the careful study of the young by scientific methods; and in the chapters of this little work, parents and teachers will find much suggestive material for thought. Darwin himself would have rejoiced to note a "sign of the times" in the publication of Dr. Warner's lectures, seeing that great stress was laid by the author of "The Origin of Species" on the careful observation of infancy and childhood with reference to the development of physical and mental characters. We trust this work will be widely read. It is in every respect a valuable manual for educationists at large.

MAGAZINES OF THE MONTH.

Belgravia for February is a bright number and contains an admirable collection of stories both complete and serial. "The Great Cryptogram" is evidently suggested by the Shakespeare-Bacon controversy. *The Gentleman's Magazine* contains among other interesting papers a highly readable one on the "Ascent of Mind," by Dr. Hardwicke. "The Faroe Isles" is the title of another well-written article. In *Harper's Magazine* a paper on "Socialism in London," illustrated by F. Barnard, will be read with both interest and amusement. Mr. Black's novel, "In Far Lochaber," is here presented in its second instalment, while an article on "Ship Railways" deals with a problem in modern locomotion. The illustration of "a game of chess" is conceived in the true spirit of humour. In *The Century* for February, attention will be prominently directed to an article on "Pictorial Art on the Stage," with illustrations by E. W. Kemble; while Mr. Kerman's article on "A Russian Political Prison" reveals the prison life of the Czar's dominions in a graphic style. Dr. Buckley's paper on "Divination" will also attract readers, and the illustrations of the number are, as usual, of high excellence. Messrs. Cassell's serial, the *Illustrated History of England* has reached the sixteenth part of its serial issue, while their *Countries of the World* attains its forty-fifth part this month. Both are instructive educational works. *The Season* for February (13, Bedford-street, Covent-garden, London, W.C.) continues to take a first place among the magazines which appeal specially to the fair sex as guides to fashionable dress.

Sanitary Appliances, Etc.

RIZINE.

UNDER the above designation, Messrs. Gillman & Spencer, of 21, St. George's-road, Southwark, London, S.E., send us samples of a new food-product, which should become popular as a nutritious article of dietary. "Rizine" is a farinaceous compound which appears to combine in itself the food-qualities of several of the best known foods of this kind. It can be used for making blanc-mange, puddings, custards, curries, and for thickening soups, and allied culinary operations. In this light it is certain to become a useful article in the kitchen. "Rizine" is easily prepared, and its price (6d. per lb.) should bring it within the reach of all. We may add that the proportion of nitrogenous matter in "Rizine" is tolerably high, and this fact alone commends it as a nutritive article of diet. For nursery use it should become a favourite with those who have the care of children, its flavour being highly palatable.

STERN'S PUMILINE PREPARATIONS.

MESSRS. G. & G. STERN, of 11, Billiter-square, London, E.C., have prepared a series of preparations made from the *Pinus Pumilio* or "Pumilio Pinè" of botanists, a tree growing in the higher elevations of the Alpine range, at heights of from 6,000 to 8,000 feet above sea-level. The idea of using pine products for the cure of disease is, of course, a very old one. The fragrance of the pine forests has been famed for producing sleep, for soothing nervous troubles, and for purifying the atmosphere. The further application of this line of research has resulted in the knowledge that pine products may be used with great benefit for the relief and cure of many lung troubles, coryza, catarrh, hay-fever, and allied ailments of the air-passages; while in certain skin diseases the use of pine preparations has been found to be highly efficacious. The Pumilio Pine preparations have acquired in Germany a very high reputation as means of cure in the above ailments, and Messrs. Stern, in turn, have introduced these remedies to the notice of English medical men and of the English public at large. A very practical step has been taken indeed in the establishment

"ELECTRICITY IS LIFE."
(TRADE MARK.)

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WORLD-FAMED
GALVANIC BELTS,

FOR the CURE of NERVOUS DISEASES.
HAVE RECEIVED TESTIMONIALS from
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HER MAJESTY the QUEEN,
THE ACADÉMIE DE MÉDECINE of Paris and
FORTY MEMBERS of the
ROYAL COLLEGE of PHYSICIANS of LONDON.

RECENT TESTIMONIALS.

GALVANISM *v.* NEURALGIA.
Whitacre Station, near Birmingham, Jan. 9, 1888.
Dear Sir,—I am pleased to inform you that after wearing your Galvanic appliance for about two weeks the neuralgia quite left me, and I have not felt any pain since.
I feel better and stronger in every way.—Yours faithfully,
J. L. Pulvermacher, Esq., 194, Regent-street, W. T. METCALFE.

GALVANISM *v.* VARICOCELE.
Montgomery-street, Sparkbrook, Birmingham, January 7th, 1888.
Gentlemen,—I have much pleasure in informing you that the Galvanic Belt which I purchased from you in October last has quite removed all symptoms of varicocele.
I have not had the slightest pain since wearing your Galvanic appliance.
Yours truly, J. PASS.
Messrs. J. L. Pulvermacher & Co., 194, Regent-street, W.

GALVANISM *v.* ASTHMA.
Eastbourne, 6th Jan., 1888.
Dear Sir,—I am pleased to say that I have greatly benefited by the use of your special appliance for asthma; in fact, after the first three weeks my asthma entirely left me.—Yours truly, B. SHEPHERD.
Mr. Pulvermacher, 194, Regent-street, W.

GALVANISM *v.* NERVOUS EXHAUSTION.
Bradford, January 4th, 1888.
Dear Sir,—I am pleased to inform you that since wearing your appliance I have gained much in physical strength, general health, and mental power, with increased buoyancy of mind.
I consider that your treatment has enabled me to resume my work, that of teaching, and to find a pleasure in life and in my daily duties.
With many thanks for the benefit I have received, yours very truly,
Mr. J. L. Pulvermacher, 194, Regent-street, W. (Miss) H. HURRY.

GALVANISM *v.* SCIATICA.
8, Church-row, Sudbrook, near Chepstow, 31st December, 1887.
My Dear Sir,—I ought to have written to you long ago to tell you what great benefit I have derived from your treatment.
I am now quite cured of Sciatica, and I never really had a bad attack since I first applied your Galvanic Belt.
I feel almost ashamed of myself for not writing to you before, and you are quite welcome to make use of this letter.—Yours faithfully,
Mr. J. L. Pulvermacher, 194, Regent-street, W. W. TAYLOR.

GALVANISM *v.* CONSTIPATION and NERVOUS EXHAUSTION.
111, Upper Moss-lane, Manchester, 9th December, 1887.
Dear Sir,—I feel it my duty to acknowledge the great and unexpected benefit I have derived from your treatment. My case was one of chronic constipation and nervous exhaustion of over forty years' standing, and after trying various remedies without any effect whatever, I was persuaded to purchase your Combined Belt, which has resulted in not only strengthening my body and limbs, but, to my great surprise, has cured my constipation, and I now have as natural and healthy action of the bowels as I could possibly desire. You may make what use you like of my name and address.
—Yours gratefully, THOMAS CAHY.
Mr. J. L. Pulvermacher, 194, Regent-street, W.

GALVANISM *v.* ASTHMA.
142, Hill-street, Glasgow, 6th December, 1887.
Dear Sir,—I have certainly derived much benefit from your treatment, and I have not had a regular attack of asthma since I first commenced your Band three months ago.—Yours truly, J. NAIRNE.
Mr. Pulvermacher, 194, Regent-street, W.

GALVANISM *v.* NERVOUS EXHAUSTION.
The distressing symptoms of Nervous Exhaustion and Debility are speedily removed by means of PULVERMACHER'S world-famed GALVANIC BELTS, which are so arranged as to convey a powerful electric current direct to the affected parts, gradually stimulating and strengthening all the nerves and muscles, and speedily arresting all symptoms of waste and decay.

ADVICE PERSONALLY or by LETTER, free of charge.

FOR FURTHER TESTIMONIALS, both Medical and Private, see new Pamphlet, "GALVANISM: NATURE'S CHIEF RESTORER OF IMPAIRED VITAL ENERGY," post free on application to

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GALVANIC ESTABLISHMENT,
194, REGENT-STREET, LONDON, W. (nearly opposite Conduit-street).

at Farnborough, Hants., of inhalation rooms (in connection with the Hydropathic Establishment there), where Stern's Pumiline is exclusively employed in the treatment of lung ailments.

The value of Pumiline in its various forms of Essence, Extract, Voice Jujubes and Soap, has been attested by Sir Morell Mackenzie, Dr. Litton Forbes, and many other medical practitioners whose views are published in the pamphlet which Messrs. Stern send post free to inquirers on application at 11, Billiter-square, London, E.C. Of the chemical excellence of these Pumiline preparations, as attested by Professor Attfield and other analysts, nothing further need be said than to add that their composition is such as to bring all the principles of the pine into active use. The "Pumilio Pine Essence" is employed for hoarseness, cold in the head, asthma, &c., and is used as an inhalation or in the form of spray. Messrs. Stern's Spray Producer or Vaporiser is sold at a very cheap rate, and is an effective instrument for the purpose indicated by its name. For embrocations in cases of gout and rheumatism this essence is also of high value. The "Pumilio Pine Extract" is used for baths, and in the form of poultices and plasters for gout, neuralgia, and for skin-disorders. For the easy cure of sore throat and hoarseness, the "Pumilio Pine Jujubes" present a favourite remedy. These jujubes are astringent in character and effective in relieving all ordinary throat and voice ailments. The "Pumiline Soap" is an excellent toilet article, agreeable to use, and very refreshing in its action on the skin. It has also disinfectant properties of a high order, and such as should make it popular in the sick room. For nursery use this soap is to be highly recommended. In these "Pumilio Pine Products," Messrs. Stern have introduced remedies of simple and effective nature, which are certain to become popular, if only from the fact that they exercise an undoubted influence in the cure of all chest affections.

Our Letter-Box

"Conference [maketh] a ready man."—*Bacon.*

NOTICES TO CORRESPONDENTS.

All Communications for the Editorial Department (including Books for Review, Specimens of Sanitary Appliances, &c.), to be addressed to "THE EDITOR OF HEALTH," 2, PATERNOSTER-SQUARE, LONDON, E.C. *Those intended for the Publishing Office to be sent to* MR. A. P. WATT, THE PUBLISHER, *at the same address.*

RULES FOR CORRESPONDENTS.

OWING to the mass of letters which reaches us each week, we respectfully direct the attention of Correspondents, desiring replies in the LETTER-BOX DEPARTMENT of HEALTH, to the following rules:—

1. All questions are answered free of charge in the columns of HEALTH.
2. All letters must be legibly addressed to "The Editor of HEALTH, 2, Paternoster-square, London, E.C.," *and to no other address.*
3. Questions to which answers are desired by post, are so replied to solely at the Editor's discretion. If no answer is sent by post, the query will be replied to in the "Letter-Box" columns of HEALTH. A stamped addressed envelope must accompany all queries to which a private reply is desired.
4. Addresses of physicians and surgeons will, as heretofore, be forwarded FREE to Correspondents on their enclosing a stamped addressed envelope for reply.
5. Correspondents are requested to write on one side of the paper only, and to make their inquiries as brief as may be consistent with clearness.
6. From the necessity of sending HEALTH to press early in the week, no Correspondent can be replied to in the "Letter-Box" columns in the same week in which the inquiry is received. Replies crushed out of any issue will be found in the succeeding number.
7. No Post Cards must be used in sending queries. Violation of this rule deprives the sender of the privilege of a reply.

QUERIES AND ANSWERS.

REPLIES: GENERAL, SANITARY, AND MEDICAL.

[Readers of HEALTH will kindly note that when back numbers of the journal are desired, the letters containing such requests and stamps for the numbers should be addressed to the PUBLISHER of HEALTH, 2, Paternoster-square, London, E.C., and *not to the Editor.*]

H. D. POLLOCK.—We should say Bournemouth or Ventnor. At the latter place there is already established a consumption hospital, and the Isle of Wight is famous as a sanatorium in the disease. Of course, your question, as a general one, can only be generally answered. Much would depend on the stage of the disease (as regards a seaside residence) in individual cases.

JACK.—1. Continue to bathe with cold water night and morning, and try one of Pulvermacher's Belts. It is probable that by these means you will increase the nutrition of the parts. 2. "Shyness" is not a disease, therefore there is no cure therefor, save, indeed, the cultivation of the general health. 3. Before breakfast: take the advice of a gymnastic instructor as to weight.

ANXIOUS.—You might try taking fifteen drops Fer Bravais before your meals as a suitable tonic, and we advise you also to try milk (as a sheet-anchor of your dietary) peptonized with Fairchild's Powders. This will induce easy digestive action, and aid your cure. For the rest, avoid much meat food, and take Brand's Beef Essence, Soups, and white boiled fish. Eat stale bread only.

G. C. SMITH.—1. Difficult to denote the "healthiest" spot, so much depends on individual constitutions. We imagine Highgate and Hampstead if bracing air is required, or Streatham and Norwood if a more relaxing locality is needed. Kensington is healthy enough, but is not remarkably bracing.

DOWNHEARTED.—Read the pamphlet "A Lecture to Young Men" (post free for 1s. 1d., from Mr. Renshaw, 356, Strand, London, W.C.), and note what is therein said regarding diet and tonics as suited to cases like yours. Bathe the parts with cold water each morning, and wear a suspensory bandage.

JUNIPER.—See HEALTH, Nos. 238 and 237, for articles on "Pinol" and "Saccharin." The "Sanitas" vaporizer was described in a past volume of HEALTH. Apply to Mr. Kingzett, "Sanitas" Works, Bethnal Green, London, E.

DUBITANS.—We can only reply that any belt, professing to be of electrical nature, must, if it realizes its description, possess a battery or other means of producing currents. A belt consisting of flannel or other material, with metal discs sewn therein, cannot, in the absence of definite electrical apparatus, produce electrical currents. If you have purchased any belt of this description and expect it to give out electrical currents, you must be very ignorant of electrical science.

T.—Read the pamphlet recommended above to "Downhearted," and follow out the advice it gives regarding the use of diet and tonics in cases like yours.

R. MOORE.—Give the Dahl's cakes a fair trial. They are not sweet, and may suit you extremely well. Compound liquorice powder is a safe aperient: but it might be better to try "Æsculap" water occasionally; if the Dahl's Cakes and a largely vegetable diet do not suffice to cure you. Hock is an astringent wine, and you should avoid it till you are well. Try milk peptonized with Fairchild's Powders in place of tea and coffee; and see that you rest after your meals.

W. O. B.—You had better first of all read the pamphlet recommended to "Downhearted" in the present number of HEALTH, and note its directions regarding diet and the use of tonics. The Fer Bravais as therein recommended should be tried by you. Take plenty of open air exercise. The Birmingham firm you consulted was certainly a quack one. We do not know the other person or firm you name.

REDSKIN.—It is difficult to suggest any remedy in your case beyond advising you to look well after your digestion, and to rest after your meals regularly. This course is usually successful in preventing flushing, but if the marks you mention are due to enlarged veins we fear nothing will remove them. Applying a lotion made of one part hazeline added to three or four parts of water, might assist you. A change of air would benefit you probably, by improving your general health.

SPERANS.—Read the pamphlet recommended to "Downhearted" in the present number for hints on diet and hygiene at large adapted for cases like yours. It is evident your digestion is faulty, and we recommend you to try peptonized foods for a time. Peptonize milk with Fairchild's Powders, and see if this process will assist assimilation. As regards tonics, try fifteen drops Fer Bravais in half a tumbler of water (so as to thoroughly dilute it) and take this half an hour before your meals twice daily. A Pulvermacher's Belt is that you should purchase.

T. M. J. MUNRO.—It appears to us that you require a tonic remedy such as strophanthus. This would in all probability do you much good, but it can only be used under medical care. We suggest you should consult another physician (we can send you address if you desire it, on receipt of stamped addressed envelope), who will pay more heed to the history of your case than did your former adviser. Rest after meals rigidly, as a necessary health-rule, and when flatulence is present take five drops Pure Terebene on a piece of sugar. If we can assist you further, let us know.

REGRET.—Read the pamphlet recommended to "Downhearted" in the present number, and you will find full information given therein. You must renounce the habit entirely. The "reverend" person whose leaflet you read is a quack.

CALUMET.—Follow advice given to "Regret" above. Your feelings are perfectly natural to your age, and do not, in themselves, constitute any disease; but a perusal of the pamphlet will show you how to preserve health and to avoid physiological errors.

WILLIAM GRAHAM.—1. Call at any surgical instrument-maker in your nearest city, and see what he would advise. Our own view is, of course, that the ailment should be cured by attention to diet. Let the patient avoid vegetables for a time, and when the attacks threaten let him take fifteen or twenty drops of Collis Browne's Chlorodyne in a wineglass of water, repeating the dose in four hours if not bettered. It is probable the rheumatic trouble and the other ailment are closely connected. He should rest for a period and undergo a course of hydropathic treatment at an establishment in the South—say at Bournemouth, or, if in Scotland, at Shandon or Kilmalcolm. 2. Probably undigested food or mucus. 3. The Kepler Malt Extract should be continued.

WAS IT A TRAGEDY?

NOT long ago, a mother and daughter called at the office of a prominent London physician. The young lady was fair of face, graceful of form, with a complexion indicating health, and yet her mother said there was every indication to her that she was the prey of some mysterious disorder. At her request the physician made a searching examination. Nothing was discovered. At the importunities of the mother, another physician was called in and another examination made, with the same result.

In less than three months the young lady was dead.

In the same city another prominent physician was visited recently by a young lady of attractive address, refined manners, and winsome appearance. She had scarcely stated her case when her lips quivered, her face paled, her arms dropped to her side, and she was dead! She had died alone with her medical man, and gossips made high scandal; but a *post-mortem* examination showed that her death was caused by a convulsion, and the voice of slander was hushed.

Medical science does not tell us all we ought to know. It is small satisfaction that death must lay our friends low before we can find out the nature of their disease. Life is a great mystery, and it is a sad commentary on present human attainments that death is the only key which, in many cases, can unlock the depths of this mystery.

There is something more to be dreaded than cholera, more to be feared than consumption, which is preying upon the health of our young people, because, unlike them, its approach is insidious, and we know of its presence only by the death it brings. Mr. J. S. Greensmith, of 4, Walker's-mount, Warwick-road, Batley, had an experience somewhat similar to the mother whose case is above related. His daughter, when but five years of age, seemed suddenly to droop. She was exceedingly languid, and was frequently prostrated with headache and nervous depression. The medical man who was called in said she was suffering from fever. He attended her for some time, but she steadily grew worse. At this time Mr. Greensmith read a treatise on Bright's disease of the kidneys, and made up his mind that his daughter was suffering from this complaint. At the suggestion of Mr. E. Fisher, chemist, of Roshcliffe, Huddersfield, he made use of a well-known remedy, and he tells, in the following interesting manner, what the result was: "I called at the chemist's on Sunday, after coming from church, and procured the medicine. I gave the first dose to my daughter that evening, with the result that she slept better than she had for months. I gave the remedy regularly for nearly two weeks, and my child was soon running around as well as ever she was in her life. I am certain that I owe her life to the remedy used."

In the first case mentioned, death was caused by what is called Bright's disease of the kidneys; in the second, it was found that uremic blood-poisoning, caused by the same disease, produced the fatal convulsion; and in the third case, death was threatened by the same disorder, but was averted, when every other means failed, by Warner's SAFE Cure, the only known specific for such complaints. "I am not surprised," said a candid physician to the writer the other day, "when I know the ignorance and incapacity of the profession concerning such disorders, that Warner's SAFE Cure is doing such effective work. If it can accomplish what we cannot, people are very foolish if they do not resort to its use."

This great remedy, which is working such wonders, can be had of all chemists, at 4s. 6d. per bottle, or of H. H. WARNER & CO., 86, Clerkenwell-road, London, E.C.

R. Simmonds. — See advice given to "John Jolly" in Health, No. 251, regarding the care of the hair. You should also bear in mind that the hair sympathizes closely with the general health, and you would probably improve the condition of the former by close attention to the latter. Try taking fifteen drops Fer Bravais after your meals, in water, thrice daily, as a tonic.

Omega.—1. There is but feeble absorptive power possessed by the skin, and we should not think any active results would accrue from your applying the oil as you suggest. Why not try a Cod Oil with Malt? *e.g.*, Kepler's. 2. Mostly demulscent and laxative. It is very nutritious.

T. H. Holborn.—Give the child a teaspoonful of Scott's Pure Cod Oil Emulsion after his meals twice or thrice daily, and clothe him warmly in Ward's (of Bradford) Sanitary Woollen Underclothing. If the cough is troublesome, let him inhale at bedtime the vapour arising from a pint of hot water to which a teaspoonful of Friar's Balsam has been added.

Ergo.—See advice given to "John Jolly" in last week's Health. Washing the head frequently is a source of baldness.

Tram Driver.—1. Yes; it is the tincture of the perchloride of iron which is meant for use by adults. 2. Once a day. 3. Not internally (as a drug) because the idea is to attack the parasites directly. 4. Yes; because they induce an irritable state of the health.

B. P. M.—The filter made by Messrs. Howie, Hurlford, Kilmarnock, N.B., is that we recommend you to get. It is simple in construction, not liable to get out of order, and readily cleansed, while it acts very satisfactorily.

Ordnance.—The remedy to which you allude is Dahl's Cakes (advertised in our pages), these should certainly be tried by you as a remedy for constipation.

George Fayre.—1. Nearly eighty, we believe. 2. Bayley, 17, Cockspur-street, Pall-Mall, London, S.W. 3. The French Hygienic Company, 56, Conduit-street, London, W.

E. Procter.—1. We do not know the firm you name. 2. Mellin's Food should be regularly used for the child's nutrition.

W. B.—Try "Choice Dishes at Small Cost" (1s.), by A. G. Payne, published by Cassell & Co.; or the "Dictionary of Cookery" (Cassell). "A Year's Cookery," by Phyllis Brown, (3s. 6d., Cassell), is also an excellent manual.

Fifer.—You should consult a specialist in skin-diseases. We can send you address of such if desired, on receipt of stamped, addressed envelope. It is probable shaving, for a time, will be a necessity, by way of eradicating the disease. A lotion of sulphurous acid (*not* sulphur-*ic* acid) and glycerine might do good: but your wisest plan is to see a specialist.

Hindoo.—1. Follow advice given to "R. H. B." in Health, No. 251. 2. Van Houten's Cocoa. The above recommendations will probably tone up and nourish your system.

Perplexed. — We cannot recommend you to purchase the appliance you name. Read the pamphlet, "A Lecture to Young Men" (post free for 1s. 1d. from Mr. Renshaw, 356, Strand, London, W.C.), and note what is said therein regarding tonics. Try the Syrup of the Hypophosphites as there ordered for a time, as a suitable nerve-tonic. If this fails to relieve you, say after a fortnight's use, substitute for it the Vin Mariani (Roberts & Co., chemists, New Bond-street, London, W., or any good druggist), and take a wine-glass of this wine half-an-hour before meals, thrice daily. If not cured by these means, write again.

X. Y. Z. & A. B. (Ipswich).—Perfectly possible, because the symptoms named only indicate a slight want of tone, which can be remedied. Read the pamphlet recommended to "Perplexed" above, and follow out the treatment therein prescribed. The hints given to that correspondent should also be noted. Sponging with cold or tepid water each morning will also do good. Let us hear again from you if not bettered.

Lloosy.—Read Pye Chevasse's book, "Advice to a Mother," published by Churchill, 11, New Burlington-street, London, W.; and also Miss Jex Blake's "Manual of Infancy" (Macmillan & Co.), in which full directions regarding infant-feeding are given. Numerous articles in Health give information on this topic. See last week's number; and write to the publisher of Health for the eight articles on "Infant Health," price 4½d. each.

Duffus.—Try the Trichophile Pomade (advertised in our pages) of the French Hygienic Society, 56, Conduit-street, Regent-street, London, W.; and for constipation give Dahl's Cakes a trial, and thus avoid taking medicine perpetually.

Sigismund Trottier.—The remedy is to wash the parts thoroughly morning and night, a practice necessary for ordinary cleanliness. Want of such cleanliness is the cause of the irritation. You are wrong in your idea that there is any such unnatural condition as you suppose. The book you read is that of an American quack. For the rest, follow the advice given in the pamphlet you mention.

Sanguine Temperament. — 1. Certainly; the slight ailment you name is no barrier. 2. Wear a suspensory bandage, bathe the parts morning and night with cold water, and avoid constipation by care in diet—see advice given to "Fobo" in last week's Health.

Anxiousness.—Take for a time twenty grains bromide of potash, in a wineglass of water at bedtime, and avoid taking supper for at least two hours before bedtime. You might, indeed, avoid suppers altogether.

A Three Years' Subscriber (Belfast). —[Will you kindly read Rules for Correspondents at top of "Letter Box" page, and note your error in addressing your letter to the printers of Health?]—We advise you to use, once or twice daily, a mild injection made by adding a teaspoonful of Condy's Fluid to a tumbler of tepid water, and to see that all constipation is avoided, by the use of Dahl's Cakes and a vegetable diet. Wear a suspensory bandage regularly.

Boulogne. — We should advise the wearing of the regular warm undergarments till probably April, as it is often very cold in the North of France at that time; and

A LAMPLIGHTER'S STORY.

The *Bridgwater Mercury* furnishes the following interesting facts:—John Manley, of Bridgwater, is a happy man. His good fortune deserves to be made public. Having lived among us all his life, and held the position of lamplighter for over twenty-nine years, his name and face are familiar to everybody in Bridgwater. He is liked by all, and it is safe to say one may go here, there, or yonder, and whether he meets this, that, or the other person, anywhere within the limits of our town, he will be sure to find a well-wisher of John Manley. While his life has, generally speaking, been an uneventful one, he has, nevertheless, during those twenty-nine years, met with some strange experiences. In nightly furnishing light for us all, as it were, he has weathered many a storm and wintry blast. The cause of his present rejoicing is best explained by quoting his own words, and we will only add that, being familiar with the facts of the case, we gladly make public the statement, which is as follows:—"Ever since I first got my appointment from the Gas Company, in 1857, I have made it a rule to let nothing interfere with my duties, and for seventeen years I scarcely missed a day. I was proud of my record, and resolved not to spoil it; but one night, just twelve years ago, I was obliged to get a substitute or let the people of Bridgwater wander about in darkness. Having been exposed to a spell of very bad weather, I was stricken down with a terrible attack of rheumatism which completely disabled me, so that for weeks I could not move my arms nor do my work. Although I used everything that was recommended to me, to get rid of this ailment, I have ever since been a martyr to it, and for weeks at a time have been unable to attend to my duties. In those twelve years I endured more suffering than words can express, and I began to regard my case as chronic and altogether hopeless. When I was recently stricken down again by a fearful attack of my old enemy—rheumatism—and one of our lady citizens sent me part of a bottle of a remedy which she said was a dead shot for that fearful disease, as she had found out from personal experience, I felt it hardly worth while trying the article. I was persuaded, however, to make a few applications, and to my astonishment and delight the pains and swelling not only left me, but I have been free from them ever since, and able to do my work as well as ever I could in my life. I have not felt as well in twelve years, and I do not mind saying that I, and all those who knew of my frequently disabled condition, regard St. Jacobs Oil, which is the thing that I used, as the best remedy in the world. It made me happy, and I know of several who have used it since I tried it, and all have found it wonderfully effective in driving away pain. I am so delighted with the good it did me that I shall never cease to speak well of it." Our reporter, desirous of ascertaining whether others had experienced like results from the use of this medical discovery, about which so much is now being said and written, called upon Mr. W. Hickman, the well-known chemist and wholesale druggist, Eastover, Bridgwater, and questioned him on the subject. Mr. Hickman stated that while it was contrary to his custom to give his opinion on such matters for publication, he would cheerfully make an exception in this case. Such a large number of very remarkable cures by St. Jacobs Oil had come to his immediate notice, that he regarded it as a duty to the public to express his confidence in the efficacy of the article. Among other cases he referred to that of the wife of a well-known surgeon, whose experience with the Oil was so satisfactory that she could scarcely sound its praises too loudly. Its wonderful pain-curing properties and decided power to relieve and cure rheumatism, had, Mr. Hickman said, rendered it amazingly popular among our people, and several residents of Bridgwater had handed him testimonials with the request that he would forward them to the proprietors. A friend of mine recently returned from Australia, says that his son has expended more than seven hundred pounds in his endeavour to obtain relief from severe rheumatic pains, but derived more benefit from the contents of one 2s. 6d. bottle of St. Jacobs Oil than from all other sources combined.—[2308.]

when the warmer weather supervenes, substitute for the heavier winter underclothing an excellent lighter make of woollen material, made by Messrs. E. Ward & Co., of Bradford. This underclothing will also serve for the autumn, and until the winter dress is resumed. It is unadvisable for rheumatic subjects to leave off wool entirely, even in warm weather, and light makes of woollen undergarments (as above noted) are really as cool as linen or cotton.

FRED KAYE.—You evidently suffer from polypus. Visit a surgeon, and have the nose examined. We can send you address of a competent surgeon, if desired, on receipt of a stamped addressed envelope.

BOMBUS. — Try taking twenty grains bromide of potash dissolved in a wineglass of water at bedtime for a few nights, and note effect of this drug on your symptoms. If not bettered, write again.

ALEXANDER SHARPE.—The following is on iron and quinine mixture, which may do good in the case you name:—Sulphate of quinine, eight grains; sulphate of iron, sixteen grains; dilute sulphuric acid, eight minims; water to eight ounces. A tablespoonful thrice daily.

G. A. H. — Nothing further for the present, save to continue the Cod Oil Emulsion, to clothe warmly in Messrs. Ward's (of Bradford) Sanitary Wool Underclothing, and to keep as far as possible in an even temperature.

HOPEFUL.—You need not be alarmed in any way. Read the pamphlet recommended to "Downhearted" in the present number, and note its directions regarding diet and tonics. In your case, plenty of open-air exercise and the use of Fer Bravais should effect a cure. Your other queries will be found answered in the pamphlet.

PRECEPTOR. — Address sent you, as desired. Your other questions will be fully answered by a perusal of Mr. R. B. Carter's book entitled "Eyesight Good and Bad" (Macmillan), and Cohn's "Hygiene of the Eye in Schools" (Simpkin, Marshall & Co.); both works give all information. We should not think the affection is hereditary, but much may be done to avert evil to the eyes by proper glasses and care of the health. Mr. Browning, 63, Strand, will fit the child perfectly after seeing the eye surgeon. Children's eyes often ache as the result of headache in school, and the headache, in turn, is often cured by judiciously-fitted glasses.

FRANCES. — Give the child a little Chemical Food—a teaspoonful in water, after his meals—for a time, and give him plenty of fresh air. A little of Scott's Pure Cod Liver Oil Emulsion with Hypophosphites might also be tried.

GEORGE P.—If the discharge has ceased, we should advise you to do nothing more. Injections will only do harm. Take, internally, the Fer Bravais after food. Avoid all alcohol, and do not over-exert yourself in any way. Avoid constipation above all things, and try a vegetable dietary (see advice to "G. X." below) for a time. Take no internal medicine save the tonic above ordered, and wash the parts regularly with Bayley's Spermaceti Soap and tepid water morning and night.

COLD ONE. — Try inhaling the smoke from Dr. Douglas's Maori Cigarettes, or Marshall's Cubeb Cigarettes, through the nostrils. Dr. Dunbar's Alkaram has also a high reputation in checking nasal catarrh.

G. X.—Try a vegetable dietary—stewed fruits, apples or oranges, &c., and wholemeal bread, with Grant's Oat Flour for supper and breakfast; avoid tea and coffee; take Cascara Cordial, twenty drops in water, between meals, once or twice daily. Sponge with cold water each morning; sleep on a hard mattress; take plenty of open-air exercise, and avoid fluids and suppers late at night.

NORD. — Write to Mr. Pulvermacher, 194, Regent-street, London, W., for prospectus of his Galvanic Belts, and give one of these excellent appliances a full and careful trial. We have known these belts act very successfully in cases like yours.

BRONCHIAL. — Inhale, at bedtime, the vapour of a pint of hot water to which a teaspoonful of Friar's Balsam has been added. After your meals, take a dessertspoonful of Scott's Cod Oil Emulsion with Hypophosphites, thrice daily, as a general strengthening measure.

NETTA FAIRBAIRN.—Take a pill containing one grain permanganate of potash, to be made up with Kaolin. Take two of these pills, or two dioxide of manganese tabloids, twice daily, after your food, before the period, and let us hear the result after a brief trial of this remedy.

F. FORRESTER.—Use Bayley's Spermaceti Soap; take a hot bath twice weekly to assist skin-action, and press out the blackheads, sponging the skin thereafter with Bayley's Lavender Water. Avoid fatty foods in excess.

C. POWER.—Dr. Pierre's Eau Dentifrice and his Tooth Powder (advertised in our pages) should be regularly used by you. These preparations prevent decay, and the Eau Dentifrice is an excellent mouth-wash after smoking.

PETER MAIR.—Try Bayley's cure for piles (17, Cockspur-street, Pall-mall, London, S.W.), which in your case is almost certain to effect a cure. It is a safe and trustworthy remedy.

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The price of numbers 1–156 has been increased to 4d. each, as, in consequence of the great demand for them, they are now nearly out of print; Nos. 157 to date may be had, price 2d. each.

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THE READERS OF

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THOMAS BEECHAM.

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Our Annual Health Bill. By Dr. Andrew Wilson. See page 264.
Diseases from Alcohol. By Edward C. Mann, M.D. p. 271.
Better Cottages. By Dr. A. Crespi. p. 265.

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[The above letter, dated Sept., 1886, is from a medical gentleman in extensive practice in a large city in the North of Ireland.]

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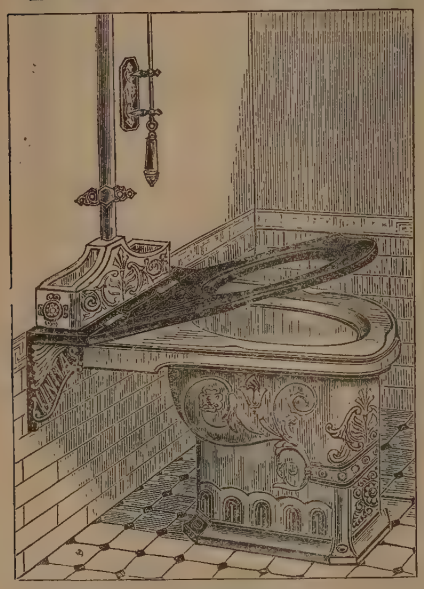

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◆ HEALTH ◆

EDITED BY

DR. ANDREW WILSON, F.R.S.E., &c.

LONDON: *FRIDAY, JANUARY* 27, 1888.

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Notes by the Way

BY THE EDITOR.

"Health is the foundation of all our physical happiness."—*Herder.*

VARIOUS correspondents have called my attention to a recent report of an inquest held in the East End of London, in the course of which it was stated that a commercial traveller, named Moses Raphael, was admitted to the London Hospital suffering from mysterious pains in the head. He got worse under treatment, and died the day after his admission to hospital. At the inquest the physician who examined his body explained the mystery of his death. On opening the man's head he discovered a penholder and a nib, about three inches long, attached to the right orbital plate of the skull (the plate on which the eye and its belongings rest), and it must have been there for a considerable time, for the bone had partially grown over it.

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NOBODY would believe this story, says a lay writer, if it were told in a novel, for we do not think that any physician has ever yet seen a man's brain which has had a penholder and a nib sticking in it for a considerable time during life. There are only two ways in which a penholder could be passed up into the brain, and then broken off short; one is by the nasal passages, and one is through the eye. Yet it is impossible to suppose that a penholder could be pushed up under the right orbital plate through the eye without leaving marks, or through the nose without the victim knowing something about it.

IN discussing a curious incident such as the above, it is well to bear in mind that the brain itself, contrary to popular opinion, is a non-sensitive organ, and that cases are numerous in which recovery from very serious wounds and losses of brain-substance has been recorded. There is nothing startling to physiologists in the fact that a foreign body should have remained located in the brain for a lengthened period without apparently giving rise to untoward symptoms. A reference to Dr. Neale's "Medical Digest" shows that any number of cases may be found in which bullets have been imbedded for years in the brain. There is a case in which a dagger was repeatedly thrust into and pulled out of the brain by machinery, the patient, nevertheless, recovering.

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DR. NEALE'S references also give us medico-legal cases in which insane persons have thrust wires, needles, and awls into the brain "with comfort"; and I imagine a perusal of Taylor's "Medical Jurisprudence" will add to the list of curious injuries of this character. In the recent case above-noted, I presume the penholder must have been introduced by the nose. If introduced by the eye, it would have given rise to serious injury of that organ. The full details of the case are not given in any report I have seen; but it would be interesting to know something of the patient's history, mental and physical, by way of elucidating the true history of the injury.

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MR. J. BLAND SUTTON, whose researches in comparative pathology have added so largely to our knowledge of disease, has recently written regarding over-growths in animals. He says that "Nails furnish much that is curious among overgrown structures. In the human subject the commonest examples occur in bedridden women; in a toe removed by me from a woman aged eighty-three, the nail of the hallux was two and a half inches long, thickened and twisted like a ram's horn. In ungulate (hoofed) mammals they are yet more remarkable. In the Proceedings of the Zoological Society (1887) I have figured the overgrown hoofs of a goat, which measured ten inches round the curve on one foot and fourteen inches in the other. The sharp claws of the carnivora sometimes attain excessive length when kept in cages. These overgrown claws describe circles and re-enter the foot, causing horrible pain.

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A LION had a claw of this character, and in order to cut it, the animal was caught by a rope and held fast. Its struggles and fury were very terrible. A few months later the claw grew again, and gave the beast pain. This time it was caught, secured with little difficulty, and, as if sensible of the relief it had previously obtained, submitted to treatment with scarcely a struggle. This reminds one of the story of Androcles and the lion.

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The beaks of birds, especially pheasants, peacocks, partridges, and parrots, are liable to similar overgrowth. Of course, the great difference between overgrowth of skin-structures and hypertrophy is that overgrowth arises from disuse, hypertrophy (or overgrowth) from increased use; but there are two points in which the processes agree, and hypertrophy may occur in dermal organs. This last point may be illustrated by the nail of the thumb of those who labour with their hands; in most persons who employ the hands usefully, the nails of the thumbs are thicker than those of the remaining digits, and that of the right thumb is often much thicker than the left one.

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This form of hypertrophy attains its maximum in the horse. We know that when organs are paired, such as the kidneys, the slow loss of one will be compensated by the gradual increase of its fellow, due to extra work and blood supply. In 1887 Dr. Sclater exhibited at the Zoological Society an elephant's tusk which was six feet long, and weighed over 100 lbs. It was obtained from a 'rogue' elephant killed at Goruckpore in 1836. More than one specimen of this kind has been described."

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A medical writer has placed on record a very important caution to mothers and nurses regarding the use of perambulators in winter. He says that "The sudden onset of cold weather has accentuated the disadvantages which attend the use of perambulators. Admissible perhaps when the temperature is such as to render care as to warmth superfluous, they become obnoxious the moment the season changes and chilly blasts replace the summer heat.

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There is hardly a more pitiful spectacle than the poor little mite, wheeled heedlessly along by an indifferent nursemaid or thoughtless parent, exposed to breezes which pinch the face and give a general aspect of acute discomfort. One has only to reflect upon the sensations which attend driving in cold weather, even under the most favourable circumstances, to understand how injurious such exposure must be to the motionless little organism in the perambulator, whose squeal of discontent is promptly checked by a reprimand.

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"The number of perambulated infants who have contracted bronchitis and similar complaints from this kind of exposure since the commencement of the present month must be very great, and yet the exercise of the slightest common sense would or ought to have sufficed to warn the parents of the danger thus thoughtlessly incurred. There are two courses open: if the child be too young to walk it should be carried; due warmth is thus at any rate secured, and the outing will in addition be more exhilarating.

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If the child can walk, however slowly, such a means of progression, though possibly less to the liking of the nursemaid, is infinitely preferable to the motionless exposure of the perambulator. Put on their guard by the experience of a bleak October, it is to be hoped that mothers will think twice before exposing their infant progeny to the boreal breezes. The public will be spared a pitiful spectacle, and the risks of disease and mortality will be proportionately diminished." These valuable counsels cannot be too closely laid to heart and practised by all who have to do with the care and well-being of infants.

Original Essays

"Life is not to live, but to be well."—*Martial.*

OUR ANNUAL HEALTH BILL.

By Dr. Andrew Wilson.

The report of the Registrar-General for 1886 is as usual a voluminous one, and is far removed, in respect of its interest, from the ordinary run of blue books and official records. The 49th Annual Report deals with the year before last; and from its intricate and comprehensive nature we may learn how the science of vital statistics has grown "from more to more" with rapid strides. Within its pages are discussed not only matters relating to the births and deaths of the nation, but to its material prosperity in other ways and fashions. Thus we find details about pauperism and emigration furnished by the Registrar-General. The state of trade during 1886 is also touched upon, and even the phases and strength of the religious beliefs of England and Wales, are to be included among the items presented for the mental digestion of the people.

First in order of importance, perhaps, comes the question of the death-rate of England and Wales in 1886. All over, this rate amounted to 19·3 per 1,000, and it is notable that 1886 was exceeded in respect of its low mortality only by 1881 with a rate of 18·9, and by 1885 with a rate of 19·0. A further comparison shows that this advance in health-conservation has really been of progressive nature. For example, in the years from 1838 to 1880, the death-rate was invariably over 20 per 1,000. From 1881 to 1886 the rate fell below 20. From a general standpoint, then, it is evident we have of recent years been saving life, and that at a very appreciable rate. Curiously, however, the difference between the death-rate of the sexes reveals a discrepancy, if we may so term it, or disproportion of remarkable kind. It is noted that the deaths of males bears, at present, a greater relative proportion to those of females than was represented in former years. A brief comparison of figures proves this fact. Taking equal numbers of living units, in 1886, the deaths of males were as 1,109 to 1,000 female deaths. The causes of this increase are difficult to trace. It is possible, of course, that the old idea of the greater risks of males and their greater liability to accident and disaster may explain the difference in question; but admittedly this solution is one which hardly explains the disproportion.

Age is invariably an interesting feature in relation to death-rates. The year 1886 is notable for the high death-rate of infants, and it is equally curious to observe the large proportion of deaths among the very old. The relation of weather to health operated here apparently. The summer of 1886 was a hot one, and this fact implies a high rate of mortality among children under one year of life from the "infantile diarrhœa," which, like a mountain of death, shoots up in July and August in the course of the curve marking the death-rate of the very

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young for the year. In the case of the very old, the raw and cold weather of December and of February, 1886, may account for their high death-rate, due to chest affections, from which so many aged persons perish.

In every report of the Registrar-General, we turn with interest to the pages dealing with the death-rate from infectious or zymotic diseases. These latter ailments are, in truth, our modern plagues. They are largely preventible in nature, and this being so, the measure of their repression may be taken as a criterion, more or less exact, of the intelligent supervision of the health of the people, not only by themselves, but also in co-operation with the efforts of medical authorities to limit the spread of these ailments.

In 1886, the deaths from infectious fevers, then, were below the average amount. In this single fact there is cause for congratulation. Special fevers also showed a singularly modest death-roll compared with their record in previous years. Take, for example, scarlet fever; a particularly frequent and fatal ailment. In 1886, the mortality from this latter disease was the lowest on record. Before 1883, scarlet fever showed a death-rate at or over 500 for every million of living persons. At and after 1883, we find a satisfactory decrease. In 1883, it was 472 per million; in 1884, 400; in 1885, 231; and in 1886, 215. Of typhoid fever—the ailment accompanying deficient drainage and like conditions—it is especially gratifying to observe, a similar report is made. In 1885, the typhoid death-rate was the lowest on record; while 1886 approached its predecessor most nearly of all other years. Small-pox appears in 1886, with the lowest death-rate known; and of typhus fever the same remark holds good. Measles showed a higher death-rate than usual, but in 1885 it was greater than in the year under review. Diphtheria seems to have remained at the average mortality, as also did whooping-cough.

Turning now from deaths to births, we find that in 1886—which, by the way, showed a decreased rate of marriages—the birth-rate was 32·4. This ratio was never equalled for lowness save in 1848, when it attained the same figures. In 1876, a year of prosperity, the birth-rate was 36·3, and we are informed that since 1876 the birth-rate has steadily decreased. The illegitimate births have apparently decreased proportionately with the feebler marriage-rate.

The marriage-rate of 1886 was itself the lowest that has been recorded in any year since registration began. We are reminded that the late Dr. Farr maintained that the marriage-rate rose coincidently with a fall in the price of wheat. The Registrar-General to-day says that the decline of marriages in numbers continues to agree with the fall in the value per head of British exports, and with a continued fall in the price of wheat. Cheap bread, in the view of Dr. Farr, we presume, meant cheap living otherwise, and this latter condition favoured marriages. To-day, however, the general depression in trade undoubtedly appears to have affected the marriage-rate, and a wider generalization is thus brought into the field of the social statistician than was noted in Dr. Farr's day. It is also a significant fact that late marriages appear to be favoured by the people at large. This incident alone lowers the rate. The average age of male-marriage appears to extend from 24 among miners to 29 among farmers, and to 31 among the professional and independent classes of society. On the female side in these classes the ages vary from 22 to 27. A proportion of the marriages shows, however, an excess in what are called "under-age" unions. Of the bachelors who entered into wedlock in 1886, 8 per cent. were minors; and the spinsters who were "under age" numbered 24 per cent. In 6 per cent. of the marriages of bachelors and spinsters whose ages were given both were minors.

These brief details, culled from the report in question, may serve to suggest important thoughts and considerations with regard to the social progress of the nation. The report is an encouraging one in so far as it tells of the repression of disease and the saving of life. If in its relations to commercial depression and its effects on the marriage-rate the details are not so encouraging in their nature, we may yet discern a tendency towards a prudence in the assumption of the married state which, on the whole, savours of commendable forethought and consideration. The question of over-population, which is never absent from any discussion of social statistics, appears also to be solving itself, as, in truth, do most great and vital matters when public opinion is brought to bear upon their relations to national prosperity. If we are not increasing as a nation at the old rates, we may be grateful enough for the fact. Our "tight little island" is the scene and arena of such a terrible struggle for existence, for bread, and for life's necessities among all classes, that we may welcome as a piece of gratifying news that the birth-rate for 1886 was lower than in any year since 1848. Social economists of a sound way of thinking, while not necessarily troubling themselves as to the exact causes of this depression in the birth-rate, will tell that such a condition of population is one which is bound, sooner or later, to affect the national prosperity in a very favourable fashion.

BETTER COTTAGES.

BY DR. A. CRESPI, OF WIMBORNE.

Late Editor of the "Sanitary Review."

IT would only be wasting the reader's time to draw his attention to the insufficient and too often wretched house accommodation of the working classes in many parts of this country. It would be absurd to suppose that he is not well acquainted with this state of things or to suppose that observation and reading do not bring the distressing want of proper houses before him. Were not the state of things unpleasantly familiar, everyone would be shocked. As it is, people feel that all has been said that can be advanced, and that the evil is almost irremediable. It is not true that the houses of the working classes are as bad as they used to be. Those who contend that there is no improvement should compare the houses in the poor streets of Exeter, Coventry, Oxford, and other old cities with the cottages in the suburbs of Leicester, Birmingham, and Plymouth. They will see that the newer cottages are, in spite of defects and overcrowding, drier, better lighted and more convenient.

Improvement is also apparent when the cottages in a Worcestershire or Gloucestershire village are examined. The newer houses are generally better constructed and healthier than the older ones. No doubt, on the whole, matters are mending in all parts of the country. Why are not sanitary reformers satisfied? Why will they continue to lament the evils surrounding them when they know that great changes are being made? The answer is that improvement is not as rapid as they desire, so that the majority of cottages are in many respects inferior to what they ought to be. Millions of the working classes are housed in a way which, a hundred years ago, would have been satisfactory, but which, nevertheless, is not in strict accordance with modern views.

The rapid and ominous growth of our towns, the indulgent habits of our countrymen, and the increasing aversion to outdoor exercise and invigorating country sports, make it more important than ever to provide the town poor with good houses. A cottage unobjectionable in a hamlet would be a focus of disease transported into the slums of Whitechapel and the Seven Dials.

I do not wish to damp the ardour of sanitary reformers by pointing out the difficulties before them, for they are not blind to them. I desire, while suggesting schemes that have perhaps not received the attention they merit, to insist on the fact, that a single simple remedy will not and cannot meet the requirements of all districts, and that the responsibility for the present evils does not rest with one class. Reformers like to be shown an easy way out of a dilemma, and one invariably practicable. The working classes will never, however, have proper accommodation until their condition receives the intelligent attention it urgently demands.

Nine people in ten assume that everything would go well were the Government or the landlords to build a sufficient number of decent and cheap cottages, and that the working classes would occupy them and be happy and healthy ever after. Many families in every large town, were they able to get good houses, would know how to live comfortably; but they are the exception. Many working-class families do not wish for better houses, and would not know what to do with them. Their habits require to be changed; they have to learn the alphabet of household management, sanitary science, temperance and religion. They feel their present wretchedness far less than does the casual visitor to their haunts. Before they can rise in the social scale they must be taught the importance of better homes. In other words, while trying to minister to the wants of these people, you have to impress them with a sense of the misery of their situation; you must make them dissatisfied with what they are and have before they will become what they should be.

The habits and tastes of the working classes are responsible in a greater degree than is generally supposed for the badness of their homes, and of this long and close observation convinces me. While saying this, I do not wish to exonerate the wealthy and influential from their shortcomings, nor to imply that there are not hundreds of thousands of respectable working-class families ground down by the oppression and indifference of their social superiors. I expect greater things from the determination of working men not to be kept down than from anything else. It is a poor reform which is introduced from outside. Far better that a class should work to raise itself than that it should depend upon outsiders. I should not despair of the improvement of the labouring classes were they to agitate for a better state of things. The most ominous and discouraging part of the question of national improvement is, that the demand for Acts of Parliament, better homes, and improved education comes from the classes not directly interested; while those for whom these boons are asked are, as a body, indifferent or satisfied with proposing quack and destructive revolutionary schemes, that would shatter society to its foundation and destroy public confidence.

Whether one depends on legislative enactments, model house associations, private enterprise, or public benevolence, permanent improvement is out of the question unless the remedy answers the requirements of the locality. Speaking broadly, there are three sets of circumstances obtaining in different parts of the country. There is the condition in the older parts of London, where every foot of land is of fabulous value, and is required for shops, warehouses, and offices, paying a higher rent than working men's houses can, and where, at the same time, there is great demand for small houses. In such circumstances the only remedy is the erection of enormous ranges of tenement dwellings. Where land is comparatively cheap the objections to overgrown ranges of buildings are serious enough to make model working men's barracks out of the question. In the next place, there is the condition obtaining in large towns, where, from a conjunction of circumstances, the artizans congregate in densely inhabited districts, though there may be plenty of available sites for cottages near, and even many unoccupied cottages in the suburbs. You have, lastly, the condition in most rural districts —a dearth of cottages, those in use old, small, and overcrowded, and no building going on, though land is cheap.

The same remedies are not applicable to the three cases. In London, Liverpool, and a few other places, the only course is to run up huge, unsightly, and objectionable piles of tenements, in which accommodation is provided for hundreds of persons on a single acre. In towns of smaller size the remedy is to prohibit overcrowding in the central districts, and to force the people —but how that is to be managed I cannot see—into the suburbs, where a sufficiency of suitable houses should be provided. In rural districts overcrowding should be prohibited; but it would be cruel to punish tenants unless it were incumbent on parishes to provide increased accommodation. Where, as sometimes happens, landowners will neither build houses nor sell land, there should be power to make the sale of land for house accommodation compulsory. I know at this moment places where building would commence were it possible to get land, but not a foot is to be got on equitable and reasonable conditions, and so the rural population is driven into the towns, or the labourers have to tramp many miles to their work. In one case in Dorset, a landowner offered, under severe restrictions, a piece of land for cottages, on a lease of forty years. Of course the builder would have lost severely, and the matter has dropped.

In London neither landlords nor tenants are responsible. In large towns the tenants are chiefly to blame. In rural districts the landlords are generally accountable for overcrowding and bad house accommodation.

The common impression is, that in large towns the working classes cannot obtain houses and are to be pitied. My answer is, that with ordinary care in most great cities, even in places like Birmingham, house accommodation is obtainable. The fault lies with the poorer class of tenants. I am perfectly aware that if a street is examined it is found that the houses are overcrowded. There are no unoccupied houses, and two or more families often live in one small cottage. This no one can deny is shocking. But why do the working classes live in overcrowded and pestiferous streets in the middle of the town? The answer generally returned is that they must live near their factories; that, at any rate, is the answer working men give, and is supposed to explain the present horrible state of things. In sober truth, there are in almost every such street families that by living where they do, condemn themselves to bad houses and foul air, and at the same time place themselves at an inconvenient distance from their workshops.

I do not admit that working men, closely confined all day, act wisely when they live in the street in which they work. From an intimate acquaintance with labourers and mechanics in Birmingham, and with some in London, I

know that not a few men, who will not move into the suburbs, because it would be inconvenient and so far from their work, walk from their work in the country into the middle of the worst districts to herd in huts no gentleman would consider good enough for his horses. The most superficial inquiry in every large town reveals an appalling state. Not a landlord but informs you that he can get a larger and surer return from courts and alleys in the heart of the city than from new streets in the suburbs. There is not an overcrowded street in which there are not several families that could easily, and often more cheaply, get decent accommodation much nearer their place of employment. Who that has inquired will say that, with the exception of some towns and villages, the working classes are not in great measure responsible for the evils deplored by the benevolent? I have repeatedly known men walk from the middle of Birmingham four and five miles to their work in suburban districts, where neat and cheap cottages were abundant, and in London I have known men go six and seven miles along most devious and inconvenient routes to their work.

Very briefly to suggest a plan that might be generally applicable. For London special remedies are required; but in rural districts the solution of the difficulty is to build more houses. In towns overcrowding should be prohibited, while, wherever necessary, increased accommodation should be provided in the suburbs. I do not like to rely on, nor do I expect much from, Acts of Parliament; but to meet and overcome the evil, power should be given to properly constituted public boards to build houses, and this they should be compelled to do. It is not enough to advance loans to landowners, as now done. Something more is needed; and that is to provide, systematically and promptly, ample and cheap house accommodation.

Details I cannot enter into. I should be guilty of the absurdity of a friend of mine, an Irish physician, who has forwarded me a pamphlet containing his scheme for providing the sister country with efficient sanitary officers. He divided the whole country into districts, apportioned salaries on a very liberal scale to the officials, arranged them into classes, thought of appropriate names for them, and worked the whole matter out. I cannot waste the time of the reader giving particulars as to the number, size, and cost of the houses needed. But I am convinced that building boards, similar to school boards, might be constituted, with power to build cottages on a plan approved by Parliament. General directions could be laid down in the Act; the details should be left with the Building Boards. Good house accommodation is as important, and should be as much the endeavour of the State to provide, as good education or security for life. Let me add that the plan proposed is a crude suggestion; but neither from it, were it carried out, nor from any other, should I expect much, unless the intelligence, morality, and habits of our working classes greatly improved.

Extract of Coal.—An alkaline extract of coal has been obtained by P. F. Reisch, by digesting coal dust with caustic soda, boiling the liquid, and afterwards neutralizing it with hydrochloric acid. In this manner he obtains a new tanning material, which he calls pyrofuscine, and though the process of treating leather with it is more complicated than the usual tanning process, he believes it to be half as cheap as the bark process, and a quarter to a third cheaper than the alum process.

The Family Circle

"The child is father of the man."—*Wordsworth.*
"In bringing up a child, think of its old age."—*Joubert.*

FOOD FOR INFANTS AT DIFFERENT MONTHS.

In feeding infants, the main thing should be to provide a food that shall be easily absorbed. If this is not done, the system will be deprived of nutriment on the one hand, and the digestive organs overtaxed and burdened on the other. The majority of deaths among infants is due to disturbance of the stomach and bowels, consequent upon improper food. What are the improper foods? They are as follows:—

1. Starchy foods, which a young infant cannot digest, and produce wasting, diarrhœa, and death.

2. Plain cow's milk, the dense, tough curds of which cause no end of harm.

3. Condensed milk, upon which for a time infants appear to thrive, but which ultimately tends to develop rickets in them.

It would be too much to insist that at no time in childhood were starchy foods allowable, for such is not the case. The reason that starchy foods are not permitted is because they depend for digestion upon the saliva and pancreatic juice, which are not efficient during the first few months. It is easy to see why they should not be active in the early months, for, as the mother's milk contains no starch, there would be nothing for these juices to do.

As already intimated, cow's milk is contra-indicated on account of the heavy curds it forms. Mother's milk is free from this drawback, as it does not curdle, but forms fine, feathery flakes. To overcome the curdling of the cow's milk, gruels, farinaceous food, gelatins, &c., were originally recommended, and certainly an infant will thrive better upon milk so prepared than upon the plain milk alone, for as the particles are incorporated with the curd, they make it more friable and less difficult of digestion. The really best means of dealing with the cow's milk is to predigest it with Fairchild's Zymine Peptonizing Powders, which dissolve the casein, so that it flakes precisely like mother's milk.

The First Month.—During this period the infant should have three or four ounces of peptonized milk, say every two hours, diluted with an equal part of water, sweetened, and a little cream added. The child should be fed regularly, and not too often.

The Second Month.—During this time the quantity of the milk may be gradually increased and the intervals between the meals somewhat more prolonged. Do not allow a child to suck an empty bottle.

The Sixth Month.—At this epoch may be begun the administration of a little farinaceous food. Any gruel may be made and added to the milk to dilute it, instead of water. It will then be peptonized as the milk is.

Eighth Month.—Meat soups may now be given, care being taken to free them from fat.

Twelfth Month.—The child may begin to take light puddings, well-mashed potatoes with gravy, or the lightly-boiled yolk of an egg; but no meat should be allowed until the child be at least sixteen months old. Every new article of food should be given cautiously and in small quantities at first, and any sign of indigestion should be noted, and a return be made at once to a simpler method of feeding.

THE DISPOSAL OF THE WOMEN'S JUBILEE OFFERING.

THE Queen has expressed her approval of the scheme contained in the following address from the Committee nominated by Her Majesty to consider and report upon the best means of effecting her wish to benefit nurses as well as the nursed, by devoting to this object the surplus of the Women's Jubilee Offering.

"In obedience to the desire which your Majesty has graciously expressed to us, that we should consider and report on the method by which the surplus of the Women's Jubilee Offering may be best applied for the promotion of nursing, we have the honour to state to your Majesty our belief that the best method, and that which will be most gratifying to those who contributed to the fund, will be by the foundation of an institution for promoting the education and maintenance of nurses for the sick poor in their own homes. We believe that the institution should have its chief centre in London, but that similar central institutions should be in Edinburgh and Dublin, and that with one or all of them should be affiliated any institutions desiring such affiliation, and satisfactorily fulfilling, in any part of the kingdom, the general purpose of the foundation.

"We would recommend that the nurses should all be duly approved women of excellent personal character, and of good education, similar to that of well-trained nurses in hospitals, and a special training in district nursing and in maternity hospitals, so that they may be fit to attend poor women after childbirth.

"We hope that your Majesty would give to the institution a name indicating the occasion of its foundation, and to the nurses authority to wear an appropriate badge or other decoration. We believe, also, that it would be very useful if, with your Majesty's authority, the nurses were classed in two or more ranks, the higher of which would indicate, by name or decoration, length of service, or remarkable skill, or devotion to duty. Further, we venture to suggest to your Majesty that it would add to the esteem and utility of the proposed institution if its official work could be done in St. Katherine's Hospital, or if it could be in some manner connected with that ancient foundation; for that hospital is one of the oldest benevolent institutions in the kingdom. Ever since its foundation in 1148 the Queens of England have been its patrons; and the charter granted in 1351 by Queen Philippa assigned to it, among its chief purposes, the visitation of the sick and poor. We are prepared, if it be your Majesty's pleasure, to consider, or to take part in considering and reporting in detail, on the means by which the institution which we commend to your Majesty's favour may best conduce to the end proposed.

"WESTMINSTER.
"JAMES PAGET.
"RUTHERFORD ALCOCK."

"*Eaton, December 26th*, 1887."

ANOTHER LARGE ARRIVAL OF LIME JUICE. — The "Hilda" has just arrived at Liverpool from Montserrat with no less than 465 puncheons of lime-juice, the whole of which is consigned to Messrs. Evans, Sons & Co., Hanover-street, Liverpool. This favourite vessel has been engaged in the trade for years, and it is only reasonable to conclude that by her more of this class of juice has been imported than by any other vessel afloat. We may mention that Messrs. Evans are the sole importers.

Public Health

"Health is the first Wealth."—*Emerson.*

SOCIAL ASPECTS OF SANITATION.

FROM an instructive paper on the above topic by Dr. Russell, the able Health Officer of Glasgow, we take the following extracts:—

I have thus rapidly caused to pass in review before you the most important communicable diseases which infest mankind. They present interesting differences, but, speaking of them generally, I ask your attention to the following points:—

1. *The property of lateral extension.*—Given one person in a community attacked by communicable disease, and the one tends to become two, the two to become four; or it may be the one tends to become three, the three to become nine, and so on. In all cases you have a tendency to geometrical progression, but the ratio will vary according to the intensity of the tendency in the special disease. This tendency carries the disease from its centre of origin, as the prairie fire licks up blade after blade of grass and leaps from tree to tree with an ever-widening front. Every sick person is a menace to those who are well. The settler does not awake to his danger when the careless match is thrown down among the dry grass miles away, but it began then, not when the lurid reflection of the gathering fire lights up the horizon.

2. *The habit of endemicity*, or of lurking during the intervals between epidemics in places where the conditions are peculiarly favourable to the maintenance of the disease. It may be a house in a street, or a street in a district, or a district in a city, or some special area in the country, or some country in a continent. It may even be one special corner in the world; but in all cases it is the permanence and intensity in the lurking place of the conditions which sustain the disease in life, which lead to the settling down of the disease in this particular place. The interest of the houses, streets, districts, and countries which have never been visited by an epidemic, or have successfully expelled it, in these endemic centres is this—that a perpetual menace of re-invasion is thus kept up. It is the same interest which the lair of the tiger has for the inhabitants of the neighbouring villages; or which the Scandinavian fiords, whence the Norsemen put out, had to the east coast of Scotland and England; or the seaports of North Africa, where lurked the Barbary pirates, to the seafarers of the Mediterranean and the English Channel.

3. *The artificial and therefore remediable nature of the local conditions which foster endemicity.*—Climate, soil, and other physical features may give those conditions greater efficiency and energy, but the conditions themselves are all essentially of the nature of uncleanliness, and at most the physical peculiarities only emphasize the necessity of cleanliness. Cholera, Yellow Fever, Enteric Fever, and Typhus all positively live upon gross and palpable dirt, and wherever they sustain themselves in the endemic condition there will that dirt be found most

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gross and most palpable, and from thence may they be exterminated by the removal of that dirt.

4. *Even those communicable diseases, such as Small-pox, Measles, Scarlet Fever, and Whooping-cough, which can scarcely be said to live upon uncleanliness, but attack man as man, are* ALL *aggravated thereby.* Their epidemic tendency is increased, their fatality heightened, their capacity for indiscriminate extension intensified.

5. *The soil which sustains the communicable disease in the endemic condition and promotes the epidemic expansion is the same which produces general unwholesomeness.* A city or a country which is noted for epidemics, and which harbours communicable diseases as endemics, is always unhealthy. The measures which will exterminate the communicable diseases will promote general health by lessening the prevalence of non-communicable diseases. In short, the adoption of radical measures for preventing epidemics covers the whole field of sanitation. The wider result follows with certainty the enterprise undertaken with the narrower aim, and cannot otherwise be attained.

6. *Whoever persists in a manner of life calculated to produce or promote communicable disease injures himself first, but next, and with certainty, his neighbour.* The lawyer's question—"And who is my neighbour?" here rises involuntarily to our lips, and I know of no path which leads us to a wider answer to this old question than that which we have been following to-night. Who is the neighbour of the man living under the conditions of civilized life? Mr. Darwin by the same route reaches this conclusion:—"Man is liable to receive from the lower animals, and to communicate to them, certain diseases, as hydrophobia, variola, the glanders, syphilis, cholera, herpes, &c.; and this fact proves the close similarity of their tissues and blood, both in minute structure and composition, far more plainly than does their comparison under the best microscope, or by aid of the best chemical analysis" ("Descent of Man," 2nd edition, p. 7). Carlyle got a step higher through Dr. Alison's story of the "poor Irish widow," whose husband had died of typhus "in one of the lanes of Edinburgh," and who wandered about the town with her three children, seeking help, and finding none returned to her lane and died there, and set a-going a local epidemic which ended in the death of "seventeen other persons." He says: "Very curious. The forlorn Irish widow applies to her fellow-creatures, as if saying, "Behold, I am sinking, bare of help; ye must help me! I am your sister, bone of your bone, one God made us; ye must help me!' They answer, 'No, impossible; thou art no sister of ours.' But she proves her sisterhood; her typhus fever *kills* them: they actually were her brothers, though denying it! Had human creature ever to go lower for a proof?" ("Past and Present," book iii. chapter 2). It certainly was low enough, but human nature requires such arguments, and the ultimate cause of the existence of communicability in disease is, I believe, to enforce the golden rule upon us in reference to the physical well-being of mankind. For "who is my neighbour" in this aspect? Not only is the Irishman in his miserable hut neighbour to Dives in Belgravia, but the Polish Jew in his filthy "quarter"; not only the unvaccinated children of Leicester, but the unvaccinated French Canadian; not only the poor man in the slums, but the Indian ryot, who washes in the village tank and casts his dead into the sacred stream; the Mahommedan pilgrim, who drinks at Mecca the waters of the sacred well of Zem-Zem, which the profane chemist tells us is polluted with sewage and a main factor in the dissemination of the cholera which he carries a long stage on its journey to Europe; and the fellahs of Egypt, and every inhabitant of every unsavoury town and village in Europe where the cholera encamps on its progress to Great Britain. Indeed, in these days rapid transport has so shrivelled up space, and commerce so intermingles and distributes articles of trade which may carry disease, that it is hard to say who in the wide world may not prove their affinity to me as forcibly as my next-door neighbour.

The practical question is, "What am I to do with my dirty neighbour?" and we must bring to the solution of it a little common sense and ordinary business principles as well as philosophy. The first thing to be done is to make him a voting unit in some convenient area of local government. Let the boundary be fixed in populous places, so that the whole continuous or contiguous inhabited area shall be one; in rural districts so that sufficient mental area shall be secured to swamp local indifference and sustain an adequate executive machinery. Let the rates for all local purposes be raised from the same area, or somehow make it possible for any intelligent ratepayer to balance his liabilities for poor rates, police rates, water rates, public health rates, and so on, from time to time, and so satisfy himself that it pays to be cleanly and healthy. Impose upon these local administrative bodies the duty of providing the physical conditions and appliances of health, such as water supply, sewerage, drainage, epidemic hospitals, disinfecting apparatus, &c., and of carrying out the daily operations, such as scavenging and sanitary supervision, necessary to keep the district clean outside and inside the houses of the inhabitants. To provide against the contingency of my dirty neighbours having a local majority, as well as to maintain a staff of higher capacity to advise in special emergencies and hold local inquiries, let there be at the head of the sanitary administration of the country a local Government Board armed with power to enforce the performance of such duties as, being neglected, first injure the locality, but next involve a risk to the general well-being of the country. The local administration must, of course, have parallel power of prosecuting and punishing the dirty neighbour for overcrowding and other nuisances which affect the well-being of the neighbourhood. The principle to be strictly followed, both in the case of the personal and the local administrative unit, must be not to do anything for them, but make them do it for themselves, and bear the expense as they will reap the benefits. In this way, a constant process of education would be carried on, and a sense of personal and local responsibility be maintained. Besides, every means of directly educating the dirty neighbour should be adopted. Let his children be taught in wholesome schools, where personal cleanliness and decency should be enforced during school hours; and let them have lessons in the rudimentary facts of hygiene, and the relation of disease to pauperism, crime, and taxation.

As a mere matter of business, all this requires official administrative machinery. Every business man knows that if you really wish any function implying co-operation to be properly performed, there must be executive machinery, departmental sub-division, and general supreme supervision and co-ordination. Nothing is more conspicuous than the helplessness of the individual under the conditions of civilized life to secure the physical basis of health. What can one man wedged up in a crowd do to get fresh air, pure water, more standing room, or to avoid his neighbours' disease? It

is a question of personal physics, not of personal morality. There must be co-operation, with the unavoidable concomitant of sacrifice of some individual liberty. To trust to voluntary association, without legal sanction which shall coerce the unwilling minority, who have the power to undo all that the majority are doing, soon works its own cure by a *reductio ad absurdum*. There will always be stupid or wicked people who must be coerced, not for their own sake, but to save the wise. In America, although the locust plague was estimated to entail a loss of 200 millions of dollars per annum on the Union, no single farmer or even State could effectively combat the winged enemy. Congress appointed an Entomological Commission, who drew up a scheme of national co-operation against the national plague; but they had also to take account of the dirty neighbour, and call for "State legislation to compel the indifferent and slovenly members of each community to co-operate with their more careful neighbours in carrying out precautionary measures for the destruction of locust eggs or newly-hatched insects" (*Nineteenth Century*, January, 1885. "Locusts and the Farmers of America." Miss Gordon Cumming). The same has been our experience in Cyprus in combating the same insect. Purely voluntary co-operation failed. The apathetic peasants sometimes would not protect their own crops, to which no one would have objected if they could have starved alone.

The solidarity of human interest in the face of communicable disease has in recent times asserted itself far beyond the submerging of the individual. Nations are now learning that organization, to be equal to the task of successfully resisting the inroads of such diseases as cholera, yellow fever, and small-pox, must embrace not only local authorities within nations, but nations themselves. Even the United States, with all its jealousy of central interference with the doings of individual States, learned from the ravages of yellow fever in the Mississippi valley in 1878 that some general co-ordination and direction was necessary for the national good, and hence the Act establishing a National Board of Health passed by Congress in the following year. Canada felt that she, being in territorial continuity, could not stand aloof, and, although as yet without legislative interference, the officials of the two countries have by conferences come to an understanding as to interchange of information and mutual assistance against the common enemies of their health and life. In Europe the same powerful agency has brought governments into negotiation. "Cholera conferences" between representatives appointed by the various governments have been held. Great Britain, under whose rule the habitats of cholera exist, has been made to feel her responsibility to all Europe. At the International Sanitary Congress which recently met in Vienna, a resolution was adopted to the effect "that an international convention between the different States be established against cholera, plague, and other communicable diseases." Certain principles were accepted as the basis of this international co-operation, among which were not merely compulsory notification of each case, concentration of intelligence of new movements of disease in a central Board sitting in some neutral State, and redistribution therefrom of disease-warnings, rules as to commerce, passengers, inspection, disinfection, &c., but stipulations as to water-supply, drainage, and other measures for the prevention of disease at its point of origin. In this way, step by step, the final end of the existence of communicable disease is being worked out. Self-interest enlists the most enlightened nations in the promotion of the physical welfare of the poorest and most wretched inhabitants of the remotest corners of the earth.

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ABOUT MERCURY.

There are only four localities where mercury or quicksilver is found in abundance. These are California, Austria, Almaden in Spain, and Peru. The mines in this latter place were discovered in a very curious manner.

Cinnabar, the soft and reddish rock of which mercury forms a part, when ground very fine serves as a beautiful red paint. The Indians used this to adorn their bodies. This caused the country where they were living to be examined for cinnabar. The Romans had used it for hundreds of years in the decoration of their images. It is of great value now, in our times, and we call it vermilion. The other part of the rock is composed partly of sulphur. The cinnabar is crushed and exposed to heat.

In the meantime, mercury in form of vapour passes into a vessel framed for that purpose, where it cools. After being reduced to this liquid state it is pure, and is in condition to use. In this form it is used largely to separate the metal from the rocks to which they adhere. The rock having been crushed, the material is passed through a screen, and is washed to obtain all the gold and silver possible. Quicksilver is then placed in it, which appears to be absorbed at once; and as it takes up or moves with the metal in the ore, this metal is separated from the sand or crushed rock. If gold is the metal to be amalgamated, a yellowish white amalgam will be found. This is heated in retorts, and the mercury or quicksilver disappears, leaving the gold.

Although mercury is so useful in many ways, it is also poisonous, its vapour being dangerous to inhale. It is not many years since the mines in Austria took fire, poisoning 1,300 labourers, many of whom eventually died. Even the water used to extinguish the flames, and which passed into a river a short distance from the mines, killed the fish. The mercury is transported in some countries in sacks made of dressed sheepskins, but is mainly carried in cast-iron flasks.

A Philadelphia physician says that a great deal of what passes for heart disease is only mild dyspepsia, that nervousness is commonly bad temper, and that two-thirds of the so-called malaria is nothing but laziness. Probably he doesn't tell his patients so, but there is no doubt a great deal of truth in what he says.

Sweating of the Feet.—The latest remedies are a foot-bath of nitro-hydrochloric acid. Add just as much of the B.P. dilute acid to the water as will make it pleasantly acid. A dusting-powder consisting of fifteen parts boracic acid, twenty-five parts oxide of zinc, and sixty French chalk, applied freely to the socks as well as to the feet, gives relief, and another method is to apply boroglyceride after carefully drying and rubbing the feet. Special attention should be paid to the skin between the toes.

Healthy Houses

"A happy home must be a healthy home."—*Anon.*

WELL-WATER.

THE great majority of the people in this country obtain their drinking-water from the moving sheet of water which lies at a greater or less depth beneath the surface of the earth, and for this purpose they use wells.

The questions as to how far, and under what circumstances, well-water may be dangerously contaminated, and how such contamination may be best recognized when present, or be foreseen and guarded against, are therefore of constant interest. The journal of the Chemical Society for June, of this year, contains a paper by Robert Warington, entitled "A Contribution to the Study of Well-Water," which is of more than ordinary value and interest. In this paper is given the results of a continuous and systematic examination of the well-waters of Rothampsted, England, and of the connection between the composition of rain, drainage, and deep-well waters.

Taking a series of observations for several years, it was found that the rain contained, in a million parts, an average of two parts of chlorine, 0·67 part of combined nitrogen, and 2·52 parts of sulphuric acid. By drainage through five feet of bare soil the quantity of chlorine is not increased, but the combined nitrogen is increased about nine times by oxidation of the organic matter in the soil. The production of nitrates occurs chiefly in the summer months, and the first considerable drainage which occurs after summer will contain the greatest proportion of the nitrates.

Nitrates being assimilated by plants are generally absent in drainage from land bearing an actively growing crop. The proportion of chlorine in the purest wells at Harpenden is about eleven per million, and it varies very little. Wells in soil much contaminated by sewage may show the commencement of a rise in the chlorides one or two months after the active autumn drainage begins, and two months before the water-level in the well begins to rise. Wells little liable to contamination show a rise in chlorides later in the season. When soil has been long contaminated by sewage, and then fresh contamination ceases for a number of years, the proportion of chlorides in the well-water may be considerably higher than normal, but it will remain nearly unaltered through the drainage season.

In contaminated well-waters the proportion of nitrates and chlorides increases at first at an equal rate, but if active drainage continues, the proportion of nitrates greatly increases. The sewage of a poorly-fed population gives a high proportion of chlorides to nitrates, while stable sewage causes the reverse. The chloride contamination is more permanent than that by nitrates. The probable average proportion of nitrogen as nitrates in drainage water from cultivated land is 3·8 per million.

The examinations of waters made by Mr. Warington were almost entirely chemical; the only exception was a series of experiments which indicated that a nitrifying micro-organism is contained in deep-well waters, but in very small proportions.—*Sanitary Engineer.*

WHEN a girl is twenty she feels very easy on that score. It's only when she scores another that she begins to wonder who invented wrinkles.

Popular Science Papers

"Blessings on Science! When the Earth seemed old,
When Faith grew doting, and our reason cold,
'Twas she discovered that the world was young,
And taught a language to its lisping tongue."

—*Charles Mackay.*

THE PHYSIOLOGICAL ACTION OF ALCOHOL.

BY EDWARD C. MANN, M.D. (F.S.Sc., LOND.)

Member New York County Medical Society, American Association for Cure of Inebriates, &c., &c., Brooklyn, New York. Physician to Sunnyside Home for Inebriates, the Morphine Habit and Diseases of the Nervous System, Brooklyn, N. Y.

FOURTH AND LAST PAPER.

DISEASES FROM ALCOHOL.

AMONG the diseases which we treat arising from alcohol we have those of a functional and those of an organic nature. Among the former we would mention alcoholic dyspepsia, sensory disturbances, such as noises and ringing in the head, sparks and spots before the eyes, vascular changes in the skin, alcoholic thirst, which prompts the person to be continually drinking something, owing to the presence of alcohol in the tissues, and this distends the stomach with fluids and gases. Then there is a general nervous prostration, the result of alcohol. The person suffers from neuralgia; they are weak, and irritable, and very excitable without adequate cause. The eyes are red, the muscles are feeble, the pulse soft and feeble, the skin cold and clammy, the tongue white-coated, the throat husky, the breathing laboured, and the heart powerless; these are all familiar symptoms of the neurasthenia produced by alcohol.

Among the organic diseases we meet with disease of the heart, diseases of the blood-vessels, diseases of the lungs, a true alcoholic phthisis, diseases of the liver and diabetes, diseases of the kidneys or Bright's disease, diseases of eye, cataract, &c., alcoholic insomnia, some of the worst forms of nervous diseases, owing to the action of the toxic poison, alcohol, on the delicately organized brain and spinal cord and nerves. The earliest symptoms of these nervous diseases are failing power of speech, an unnatural weariness after slight exertion, involuntary muscular movements, loss of memory, and irritability of temper at trifles, epilepsy, paralysis, and even actual insanity, may all appear if these warnings are disregarded and the indulgence in alcohol kept up. Thirty-three and one-third per cent. of all the deaths in New York are occasioned, directly or indirectly, by the use of alcoholic drinks, and 190,000 persons were said by the late Professor Willard Parker to have died from that cause in thirty-eight years.

Finally, there is a great increase of that terrible disease, *dipsomania*, the subjects of which are either periodically or incessantly under the dominion of the terrible craving for alcohol which their will is powerless to resist. What was at first a bad habit, more or less under control of the individual, has become in time a true disease, an insanity, which the subject of it cannot control, and apoplexy, paralysis, or death is certain if remedial restraint is not applied to each and every case. In the intervals between the paroxysms the dipsomaniac repents and promises to reform, and makes all manner of good resolutions, but he never keeps them, for the simple reason that his disease is stronger than his will, and the next time, which may be a week or a month, that the craving recurs he will inevitably relapse. It is no kindness to such patients to keep them at home.

THE PHYSIOLOGICAL ACTION OF ALCOHOL IN RELATION TO NEURALGIA.

We find in the alcohol habit the general symptoms of exhausted nervous power, viz., general debility of the body, inability to walk even short distances without fatigue, general feeling of languor, unwillingness to make any active exertion, great tendency to sweat, more especially at night, but also induced during the day, and often an unsteady gait. These persons are very prone to neuralgia. The explanation of this is due to the fact that there exists in such cases a worn, irritable, hyper-sensitive condition of the sensory nerve cells of the central sensory tract of the brain and nervous system, which is the sole seat of true nervous sensibility. The central nervous system is affected by the daily dose of alcohol and the degeneration thus produced, I regard as a powerful predisposition of neuralgia of the inveterate type. Aside from the direct influence impressed on the nerve-centres, I think that this irritable and hyper-sensitive condition of the central sensory tract is often induced by visceral irritative disease of the stomach, kidneys or liver, so frequently existing in those addicted to the alcohol habit, which almost necessarily affects the sensory nerves which ramify in these organs, and from these diseased nerves, a more or less steady stream of irritative and wearing impressions is transmitted, practically without cessation, to certain parts of the sensory tract, to which the sensory nerves from any given part may go, and as a result, sooner or later, the central sensory nerve cells are brought into that degree of nutritional disturbance which is the fundamental factor in neuralgia.

RECENT OBSERVATIONS IN MESMERISM.

THE great attractiveness that the study of the varied and interesting phenomena of mesmerism possesses for the French physicians has been often noticed. Not a month passes without some new and often startling contribution. The leaders in this movement are eminent scientific specialists, and have been cautious about accepting all the strange doings of excitable subjects as perfectly genuine. They appreciate the readiness with which a shrewd patient can deceive the unsuspecting observer, and insist upon the most exacting tests, arranged with a full knowledge of the sources of error to be eliminated. Under such a scrutiny, many alleged marvels have taken on a less miraculous aspect, and many startling interpretations shown to lack validity. Amongst the oldest claimants to scientific recognition in this field is the statement that a magnet has a peculiar effect upon hypnotic subjects. Sometimes the application of a magnet causes trembling and tingling; again it is said to produce contraction of limbs, and cause such a contraction to pass from one side of the body to the other; and so on. Professor Delboeuf, a successful observer in this field, has very ingeniously tested these claims, and made much progress towards showing their falsity. He experimented upon a boy of fourteen, an experienced hypnotic subject susceptible to "magnetic" influence. In the preliminary trials, Professor Delboeuf had a true magnet and a wooden magnet made to look alike, and each fitting in a case alike for both magnets. He handed the boy the case containing the true magnet, but nothing happened: as soon as the magnet was drawn out, he developed a violent contracture, his usual symptom.

Next, Professor Delboeuf had three steel bars made exactly alike, two of which were strongly magnetized, and the third not. He gave the boy a real magnet, and asked him whether he felt anything. After an exploring glance of from thirty to forty seconds, the boy felt tingling sensations, then pain and the usual symptoms. The same was done with the other hand, and he was shown that the bar was a real magnet. Professor Delboeuf then drew the false magnet from his pocket and gave it to the boy: no effect followed. Then the third (true) magnet was given him, with the request that he should say whether it was a magnet or not. No contraction followed; and from now on, the boy had no clue as to the true or the false magnet. Fourteen trials were made, consisting simply in giving the boy a bar, and noting the result. In eleven of these trials he either exhibited the contraction when holding the false magnet, or failed to exhibit it when holding a true one; thus showing most conclusively that all the effects were self-induced, and suggested by his belief that a magnet was being applied. The same was repeated with another subject, with a like result.

Professor Delboeuf similarly tested the powers of the hypnoscope, which is simply a small hollow magnet to be held on the finger, and, when thus giving rise to peculiar sensations, is claimed to show that the holder is a good hypnotic subject. Three hypnoscopes were made exactly alike, only two of which were magnetized. Of fifteen university students, three claimed to feel glowing sensations from the instrument, and one of these felt it all the way up to the shoulder. Strangely enough, this young man held the false hypnoscope, and on trial proved to be the best subject. The conclusion drawn is, that the hypnoscope is useful in detecting hypnotic subjects, not because of any magnetic sensibility, but because persons of such a susceptible temperament as to imagine sensations from it furnish one of the chief requisites for passing into this condition.

Dr. Voisin endorses this same general view. He has repeated the noted Paris observations, in which the mere approach of an hermetically sealed vial containing a certain drug affects the hypnotized subject in the same way as a strong dose of the substance in the normal state. He finds that if the utmost precautions against talking to his assistants, and other modes of suggesting the expected effect, are taken, the result is negative, and concludes that in his subject a wonderfully shrewd appreciation of suggestions accounts for all that was exhibited. He finds, too, that the application of a magnet unknown to the subject had no effect, while she is extremely sensitive when she knows a magnet is about.

Dr. Bernheim has described some remarkable cases in which the mere suggestion of a certain idea in the waking state serves to impress this idea with a lifelike reality. His subjects are young men of neurotic temperaments in their ordinary waking condition. One patient was told that a certain physician attacked him on the street and picked his pocket. He at once accepted the tale, added details of time and place, and no amount of questioning would get him to give up the notion. Turning to another patient, Dr. Bernheim asked whether he knew anything about it. The suggestion was sufficient. The subject of the attack had told the second patient all about it in the morning, and so on. The same delusion was passed on to several patients, and accepted. These observations show a connection between what occurs in the hypnotic state and the phenomena observed in weak-willed persons. The possession by a dominant idea imposed by another or suggested by circumstances is the common mark of

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N.B.—No woollen of any kind should be applied to the parts affected, nor any metal (except silver) touch the Pommade. It will retain its virtues many years, and is therefore very useful to all Travellers, particularly Gentlemen of the Army and Navy.

HÆMORRHOIDS (or PILES).

As highly useful family medicines for that most distressing of complaints, Hæmorrhoids (or Piles), Bayley's Remedies have long enjoyed a high reputation. These remedies consist of specially prepared Pyrmont Tablets for invalid use, and of a Pyrmont Liniment for outward application. The tablets are compounded on the principle of the famous Pyrmont waters, which have been so highly recommended in cases of liver complaints, to the presence of which piles are often due, as well as in cases of the latter ailment itself. The liniment is made on allied principles. From an examination of these tablets and of the liniment, we are able to assert that they contain nothing calculated to produce untoward effects in the most delicate constitution, while they are likely to prove most beneficial in mild and severe cases alike. The ease with which the remedy may be taken—the tablets being agreeable to taste, and being merely allowed to dissolve in the mouth—will recommend this preparation in the eyes of those especially who have run the gamut of the many drugs employed for the cure of hæmorrhoids. We recommend a trial of Messrs. Bayley's Tablets, &c., which are to be obtained at 17, Cockspur-street, London, W.—*Vide* HEALTH, *April 8th*, 1887.

Prepared by BAYLEY & COMP.Y, Perfumers,

THE OLD CIVET CAT, 17, COCKSPUR-STREET, LONDON.

PRICE LISTS FREE ON APPLICATION.

many of these semi-abnormal states. They also show how easily such people can be utilized for base purposes; and Dr. Bernheim believes that the son of the sexton in the famous Tisza-Eslar affair (who claimed to have seen through the keyhole the cruelties on which the trial was founded) was a case in point.

In this connection it may be added that there is a growing sense of the great danger to which this subject is liable at the hands of amateurs. Examples of its pernicious effects in individual cases are accumulating, and a most celebrated French alienist recently expressed himself thus: "Hypnotization is not as harmless as it has been made out to be: the hypnotic state is closely allied to the hysterical neurosis, and, like the latter, it may in some cases become markedly contagious. If medicine in the name of science and art has taken possession of hypnotism, it should keep it within the strict limits of its own domain, using it as a powerful therapeutic agent, and never letting it pass into profane hands, where it is liable to be abused to the detriment of the public health.

A STUDENT in the Albany Medical College was asked the other day, in his class, how he would treat a corpulent man. He said he generally found they would take beer.

SUBLIMED SULPHUR IN DIPHTHERIA.—Mr. Valentine Knaggs has recently written a treatise on the cure of diphtheria by means of the frequent administration of small doses of sulphur. We now learn that Dr. Schnyder (Lucerne) speaks highly of insufflations of sublimed sulphur, as recommended in 1870 by Dr. Alb. Lutz (Würzburg). Dr. Schnyder has used this plan of treatment for seventeen years without a single failure. He applies the sufflations every two, four, or six hours by means of a tube, blowing the powder freely over all the parts affected. When the fauces are covered with profuse frothy mucous, it is advisable to brush this away before applying the powder. The procedure is so simple that a person of average intelligence can carry it out quite effectively. Dr. Schnyder points out that it is of paramount importance to employ the sublimed, and not precipitated, sulphur. It is a curious fact that both Mr. Knaggs and Dr. Schnyder speak so warmly of similar treatment, and that Mr. Knaggs uses *precipitated* (milk of) sulphur internally, while Dr. Schnyder uses *sublimed* sulphur topically.

DIARRHŒA OF CHILDREN.—In the *Therapeutic Gazette* an article draws attention to cases of diarrhœa so prevalent at this time of year. Special reference is made to the treatment by phosphate of sodium. It is of especial value in summer diarrhœa connected with a lack of digestive power, in which the stools are either clay-coloured or habitually greenish. In nursing children it may be given in the milk, ten grains in each bottle, or it may be given after food in a little water. It should always be given in repeated small doses and not in one large dose. In cases of habitual constipation with occasional attacks of diarrhœa in young children it is of great service. Another treatment of diarrhœa to which special attention is drawn is the use of the cold bath. In the diarrhœa of young children in intensely hot weather, the cold bath often cures when all other remedies fail. It should be given as often as the child is feverish, two or three times a day, sometimes oftener. The water should not be above 80 degs. Fahr., and the child should be kept in the bath long enough to produce a distinct effect.

Jottings from the Journals

"Th' ingredients of health and long life are
Great temperance, open air,
Easy labour, little care."—*Sir Philip Sydney.*

Children's Winter Dress.—There is a tolerably general impression in many quarters that in order to promote the health of children it is advisable to subject them to a "hardening" process. The meaning of this term it is needless to explain further than to say that its aim is to encourage native energy by opposition, to engender strength of mind and body by early participation in the struggle for existence. The principle is in itself a wholesome one, and is not without its parallel in the history of nature's processes. Care is most necessary, however, in its application. Without such care it may be, and frequently has been, overdone. In particular must it be remembered that all success in the adoption of this plan in education depends on the possession by a child thus trained of a basis of sturdy physical vigour. A delicate child, if treated after the same method, would languish and probably succumb. We have been led into this train of observation by noting the frequency with which one finds children of both sexes and of different ages, constitutions, and positions in life treated after one uniform prescription of hardy training. We would now concern ourselves particularly with that aspect of the question which has to do with clothing during such inclement weather as prevails at present. That considerable variation of opinion should obtain among parents with regard to this subject is only to be expected. Here, it may be said with truth, is room for the wise exercise of private judgment, and here we may in many cases find occasion to apply the maxims of the hardening system. So much may safely be granted, but we must not forget that certain essentials cannot be dispensed with under any plan adopted. Among these the maintenance of bodily heat and dryness is all-important, and certain of the most prevalent customs of domestic life incline us to believe that the fact is but slightly understood. The hat, for example, is often, in the case of girls, far too light and too cool. Instead of straw we would substitute some form of woollen material, just as boys, with few exceptions, are commonly provided with hats of wool or felt, which are at once light, comfortable, and suitably protective against weather. Under-clothing is another matter which does not as yet receive adequate attention. We still find the linen shirt or chemise worn very commonly next the skin. This is an error in personal hygiene which cannot under any system be excused. Summer and winter, indeed, present no material difference as regards the choice of an under-garment. Lighter or heavier, the material certainly should vary in accordance with the degree of external cold; but throughout the year no other substance is so wholesome or so preventive of chill as a woollen fabric. Of the feet we need, perhaps, hardly speak. For them, as for the rest of the body, a casing of wool is the prime requisite; and, indeed, the use of this material as a general investment for the skin will be allowed by members of the profession generally to be the great regulating principle in arranging the dress of children, whatever the view most approved in their physical education.—*British Medical Journal.*

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Small Social Vices.—A correspondent very sensibly directs attention to the influence exercised by some

of the niceties of modern life upon the physical condition of young women at the present day. Without adverting to such grave excesses as the free use of alcohol and of toxic remedies, he instances incessant tea-drinking, sipping eau de Cologne, and addiction to sensational novel-reading as examples of the prevailing spirit of self-indulgence. There is considerable force in his observation that we may be disappointed in the result if girls, who have in these and similar matters been allowed to regard their wish as their ideal, should at any time have to assume the responsibilities of motherhood. The practices to which he refers are, happily, counteracted, in many cases, by a native strength of mind and body, or by other habits of a more wholesome character. Still, it must be allowed that they are not in themselves conducive, but rather injurious, to health. They are part of a general tendency to luxurious living, which is not peculiar to one people, century, or sex, and to which we, as a prosperous commercial nation, have too readily become subject. The means of correction are not to be found in pharmacopœias, or in regulations as to the safest methods of indulging the petty cravings of selfish desire. The real remedy will be found in a return to simpler or less artificial usages, and in the increasing recognition of the value of some guiding purpose even in the leisure and the diversions of our lives. A general understanding of sanitary principles would also assuredly do much to assist the formation of a just estimate by the general public of what is and what is not calculated to favour the healthy growth of mind and body. These principles are now, happily, becoming better and more widely appreciated than formerly. The evils associated with such vices of civilization as the social customs we have referred to stand, therefore, a fair chance of great limitation, if not of extirpation, when the verdict of common sense thus instructed will have been pronounced upon them.—*Lancet.*

Punctuate.—A child of nine summers hastily entered a crowded pharmacy, and exclaimed in a loud tone: "Mother wants to p'ison the dorg three pen'orth o' soothing syrup please."

Reading without Eyes.—W. H. Murray, a colporteur of the National Bible Society of Scotland, has devised a system of raised characters by which the blind are enabled to read. We have recently received from Miss C. F. Gordon Cumming, the well-known traveller, an interesting account of this effort to reach a large and suffering class in China. It is estimated that there are over 500,000 blind persons in China. Miss Cumming reports that Mr. Murray began life as a working sawmiller in the south of Scotland; but, having by an accident lost one arm, he became a colporteur in Glasgow, and subsequently went to Pekin. His pity having been aroused for the innumerable blind whom he met everywhere, he has given every spare moment for eight years to the study of a system by which they might be enabled to read. In place of the four thousand characters in ordinary use among the Chinese, he uses embossed dots representing some four hundred and twenty sounds; and his first experiment with a blind beggar from the streets, who was enabled to read fluently within six weeks, showed that the system was practicable. A school was opened at Pekin, and blind boys learned to read with great accuracy and rapidity—indeed, very much more speedily than their companions who had eyesight could learn to read the ordinary Chinese characters.

Our Bookshelf

"Reading maketh a full man."—*Bacon.*

A BOOK ON VACCINATION.

Vaccination Vindicated: Being an Answer to the Leading Anti-Vaccinators. By John C. McVail, M.D., D.P.H., Camb. (London: Cassell & Co. 1887.)

We have long desired that some well-qualified man, thoroughly conversant with the facts of the case, and able to invest his subject with a fair modicum of interest, should undertake the task of writing an exhaustive reply to the statements and arguments of the anti-vaccination party. This wish has been at last realized, in the shape of the able volume before us. The book is written by Dr. McVail, who is medical officer of health for Kilmarnock, and who, for years past, has made vaccination and its effects on public health a special study. He has brought to the execution of his work no ordinary amount of patience and dialectical skill, and the result is a volume which will afford employment to the tongues and pens of the opponents of vaccination for many a long day to come.

We have been frequently twitted by the anti-vaccinationists on the fact that no medical man, of late years, has sought to defend vaccination in a systematic fashion. This statement has been made by persons whose main style of argument, it should be remarked, has been largely confined to the reiteration of opinions long since demolished. Abuse of wholesale kind has been heaped upon the heads of medical men who have written in honest defence of vaccination, and this often by men who, without special claims to be heard on the subject, have rushed into the field of argument and, with "apostolic blows and knocks," have endeavoured to hoot down vaccination by wordy warfare. Statistics, as Dr. McVail shows, have been manipulated in ways ingenious and wonderful to note, in order that vaccination might be made foolishness in the eyes of the people. Leicester, notwithstanding its reliance on vaccination for protection against small-pox, as the *Lancet* has so well shown, has been repeatedly quoted as an example of a town wherein anarchy in respect of defiance of law and sanitary science alike, has more than justified its assumption. Now, with Dr. McVail's book at hand, and with the mass of carefully-digested details therein included before them, medical men and sanitarians will calmly await the further moves of the anti-vaccination camp. We shall be curious to note the exercise of ingenuity whereby Dr. McVail's assault on that camp may be met or defeated by the opponents whose words and works he so ably criticizes.

One characteristic of Dr. McVail's writing is that he does not gloss over the difficulties of his theme. Take for instance his remarks in Chapter II., on the reasons why smallpox is not extinguished. Jenner himself imagined that he had discovered in his "variolæ vaccinæ" a perfect "antidote" to the disease. Dr. McVail explains scientifically and logically why Jenner's aims have not been fully realized. Anti-vaccinators have always pointed with triumph to so-called failures of vaccination to protect against smallpox; forgetting that nobody claims absolute power for the process, and that when we deal with complex living bodies we must take into account the varying circumstances which make one constitution differ widely from another in respect both of health and disease. The anti-vaccinators are reminded by our

author that even one attack of smallpox itself does not invariably protect against a second attack of the disease. As early as 1804 or 1805, Dr. McVail remarks, cases of smallpox were found to follow vaccination. It is so with scarlet fever and with measles. One attack is usually, but not invariably protective against another. Hence one common argument against vaccination is destroyed completely by the bare consideration of the foregoing fact, since if vaccinations do not claim absolute protection on the one hand, then opponents cannot logically overlook the laws and conditions of disease on the other.

Again, it is clear, that with susceptible persons (as regards small-pox) we have to deal with another condition which influences the success of vaccination. Dr. McVail says, with truth, that if 95 per cent. of a nation were vaccinated, the remainder, save for the lessening of possible sources of infection, would still be susceptible of small-pox attack. As to actual facts, in England and Wales in 1885, there were about 1,375,000 persons who, from one cause or another, were unvaccinated, and this number of persons, it is clear, affords an ample field for the kindling of the epidemics which every now and then attack us. It is not that vaccination, on the whole, is not protective, but that in its sweep it is not sufficiently extensive, from the causes named, to extinguish small-pox.

Of recent years, greater attention has been paid to the important topic of vaccination marks and their relative bearings on the question of protection from small-pox. It is obvious that if vaccination is to be fairly judged, we must be certain that the operation has been adequately performed. Of such adequate vaccination, the scars it leaves form a very fair criterion, and the scars, as Dr. McVail shows, are to be judged as regards quality and number, and collectively as regards both points. Dr. Russell, the Health Officer of Glasgow, tells us that of small-pox patients with "good" marks, 3·81 per cent. died, while of those with "bad" marks 21·1 per cent. succumbed. This contrast, he further notes, is apparent *at all periods of life*, and "rises steadily from a minimum in the earliest to a maximum in the latest periods."

The late Mr. Marson's figures tell the same story. He gives cases of small-pox classified according to the vaccination marks exhibited by the patients, and then adds the number of deaths per cent. in each class respectively. The unvaccinated thus showed a mortality of 35½; those said to have been vaccinated, but having *no* scar, 21¾; having one scar, 7½; two scars, 4⅛; three scars, 1¾; and four or more scars, ¾. Again, of the above classes where the *one* scar was *well marked*, the death rate was 4¼; but where it was badly marked the mortality was 12; and in the class of two scars the corresponding figures were 2¾ and 7¼.

These figures of Mr. Marson's have for years formed matter of attack among anti-vaccinators, and Dr. McVail in his turn exposes very clearly the weakness and unfairness of the assault. He dissects Mr. P. A. Taylor's criticism in a justly merciless fashion, a dissection which that gentleman will do well to mark. Mr. Taylor, it appears, in one of his criticisms adds together cases with three, four, and five vaccination scars, and gets a total of 1677. The actual numbers were one mark, 1124 cases; two marks, 1722; three marks, 936; four marks, 471; five or more marks, 270. This "slumping" of figures is an "old stage trick" of the anti-vaccinators; and Dr. McVail does well to wonder "if Mr. Taylor in compiling his statistics, was not struck by the fact that the small unvaccinated fraction of the London child-population sent 238 patients to hospital, while the great vaccinated whole sent only 65." It is, however, sometimes politic to ignore a fact which cannot be refuted or explained away.

It would be obviously impossible within the limits of a review like the present to enter in detail into the full bearings of Dr. McVail's book. The subject it deals with is kaleidoscopic in the variety of phases it presents for notice; and the mass of figures and circumstances noted in its pages is in itself complex and intricate in nature. The topic is, however, one of national importance, and should be patiently investigated, as set forth in Dr. McVail's pages, by every citizen desirous of knowing how at least one modern plague can be modified and thus led towards the extinction which health reformers desire. We have spoken of the public service Dr. McVail's work is likely to accomplish in familiarizing the public with facts relative to the value of vaccination. This, in itself, forms no mean result of the value of his book, which will rescue vaccination, in the public mind at least, from whatever stigma the libels of anti-vaccinators have succeeded unwarrantably in fixing upon the practice. We trust that this volume will be widely read, and its conclusions and admirably-put precepts digested by every intelligent person.

According to *Nature*, frozen fish are now imported into France, and a society formed in Marseilles for the purpose of developing the trade (the Société du Trident) has a steamer and a sailing vessel engaged in it. The steamer "Rokelle" lately came into Marseilles with some 30,000 kilograms of frozen fish in its hold, the temperature of which is kept at 17 degs. C. below zero by means of a Pictet machine (evaporating sulphurous acid). The fish are caught with the net in various parts of the Mediterranean and Atlantic. After arrival they are despatched by night in a cold chamber. Experiment has shown that fish can be kept seven or eight months at low temperature without the least alteration. These fish are wrapped in straw or marine algæ, and have been sent on to Paris, and even to Switzerland.

The Pearl Dentifrice and Essence of Pearl.—A correspondent sends us the following interesting details respecting Jacob Hemet, the inventor of the above excellent dental preparations, sold by Bayley, 17, Cockspur-street, Pall-mall, London, W.:—"You may like to know that Jacob Hemet, the original grand compounder of the Pearl Dentifrice and Essence of Pearl, was the grandfather of the far-famed Miss Foote, the Maria Darlington of her theatrical day, and afterwards Countess of Harrington. Mrs. Foote, her mother, was the daughter of Hemet, and Mr. Bayley, of 17, Cockspur-street, Pall-mall, the proprietor of Hemet's preparations, was the trustee of Miss Foote and her mother, under the latter's marriage settlement. Hence the fact that No. 17 was the first house in town that Miss Foote visited and dined at. She had accompanied her mother and father up to London on a matter of business, and Mr. Bayley, who was as hospitable as he was business-like, insisted on entertaining them while the family arrangements were proceeding. A long and pleasing recollection remained with the household at No. 17 of the young lady's beauty, grace, and extreme amiability—qualities which exercised a marked influence on her after life. All, however, is well that ends well, and no woman ever earned or deserved a higher character as wife and mother than Maria Darlington, Countess of Harrington, whose elegant carriage equipage, chariot, hammercloth, and horses, with the long skirted livery frocks of her two stately footmen still lives in the memories of not a few middle-aged Londoners."

Our Letter-Box

"Conference [maketh] a ready man."—*Bacon.*

NOTICES TO CORRESPONDENTS.

All Communications for the Editorial Department (including Books for Review, Specimens of Sanitary Appliances, &c.), to be addressed to "THE EDITOR OF HEALTH," 2, PATERNOSTER-SQUARE, LONDON, E.C. *Those intended for the Publishing Office to be sent to* MR. A. P. WATT, THE PUBLISHER, *at the same address.*

RULES FOR CORRESPONDENTS.

OWING to the mass of letters which reaches us each week, we respectfully direct the attention of Correspondents, desiring replies in the LETTER-BOX DEPARTMENT of HEALTH, to the following rules:—

1. All questions are answered free of charge in the columns of HEALTH.
2. All letters must be legibly addressed to "The Editor of HEALTH, 2, Paternoster-square, London, E.C.," *and to no other address.*
3. Questions to which answers are desired by post, are so replied to solely at the Editor's discretion. If no answer is sent by post, the query will be replied to in the "Letter-Box" columns of HEALTH. A stamped addressed envelope must accompany all queries to which a private reply is desired.
4. Addresses of physicians and surgeons will, as heretofore, be forwarded FREE to Correspondents on their enclosing a stamped addressed envelope for reply.
5. Correspondents are requested to write on one side of the paper only, and to make their inquiries as brief as may be consistent with clearness.
6. From the necessity of sending HEALTH to press early in the week, no Correspondent can be replied to in the "Letter-Box" columns in the same week in which the inquiry is received. Replies crushed out of any issue will be found in the succeeding number.
7. No Post Cards must be used in sending queries. Violation of this rule deprives the sender of the privilege of a reply.

QUERIES AND ANSWERS.

REPLIES: GENERAL, SANITARY, AND MEDICAL.

[Readers of HEALTH will kindly note that when back numbers of the journal are desired, the letters containing such requests and stamps for the numbers should be addressed to the PUBLISHER of HEALTH, 2, Paternoster-square, London, E.C., and *not to the Editor.*]

ATHENS.—The hair wash recommended to "A. R. G. H. B." in HEALTH, No. 249, should be tried by you. Use a soft brush only, and rub in the wash to the roots morning and night. Continue to wash the head once a week with tepid water and Bayley's Spermaceti Soap (17, Cockspur-street, Pall-mall, London, S.W.).

CANNES.—Try taking twenty grains bromide of potash at bedtime, and also once daily between meals for a week or so, and note effect on your symptoms. At bedtime inhale the vapour of a pint of very hot water, to which a teaspoonful of Friar's Balsam has been added. If this fails, procure a Chloride of Ammonium Inhaler (Burroughs, Wellcome & Co.'s, Snow-hill, London, E.C.) and give this inhalation a fair trial. Glad to advise you again if necessary.

MELTON.—See advice given to "Athens" above.

QUASIMODO.—Night work is, on the whole, less favourable to health than day-work, but you must bear in mind the effects of use in making an unwonted mode of life a natural one. Editors, journalists, and printers are not necessarily a short-lived race, and much depends on individual health, sobriety, and care of the general health. We think that all depends in fact on the habits of the individual. The natural time for rest would appear to be the night, but in our civilized state many modifications of natural habits are made, and that successfully. In your case, with care and attention paid to your health, there need be no reason why your employment should not be perfectly safe.

T. A. W.—The "divining rod" idea is a very old one, but as far as we know, its claims to acceptance rest on no solid basis of fact or evidence. There is no fact known to science which could render worthy of belief the idea that a twig snaps in half when near water. Carpenter's "Mental Physiology" may afford you some details on this head; but popular beliefs (like that for example in the origin of hair eels from hairs) are very hard to explode. People accept as facts mere unverified statements and unproved opinions.

A REGULAR READER.—Rest after your meals, and for a time avoid excess of vegetable foods; and after meals take five drops of Pure Terebene on a piece of sugar, as a remedy for flatulence. Substitute for tea and coffee milk peptonized with Fairchild's Powders (to be had of any chemist), and eat stale (toasted) bread only. Take white fish and light soups to dinner twice weekly in place of butcher meat. Write again if not cured.

R. H. B.—The patient in the first place must have more nourishing food than tea, which indeed is not a food at all. She should have a nourishing dinner at least, and after meals should take a dessertspoonful of Thomson's Cod Oil Cream (Dublin-street, Edinburgh). Between meals, fifteen drops of the tincture of perchloride of iron, in half a tumbler of water, should also be given. It is obvious there is great want of tone in the case named, and the patient should be well looked after. Clothe warmly and live in a pure atmosphere. If we can assist you further let us know.

T. P. S.—See advice to "Athens" above.

CRANIUM.—For scurf, rub in a little glycerine of borax to the hair-roots each morning, and use a soft brush only. A little Bay Rum may be used as a wash in the morning.

J. S. O.—You should examine carefully your habits, food, &c., with the view of discovering why the symptoms you name have become more frequent than before. See that you avoid constipation by the use of vegetable diet (and by the other rules laid down in the pamphlet recommended to "Alexis" in the present number), and avoid suppers and fluids late at night. Take plenty of out-door exercise, attend to the ventilation of your bedroom, and avoid sleeping on your back.

PREVENTION.—During the day, allow a tabloid (Burroughs, Wellcome & Co.'s—to be had of all druggists) of chlorate of potash and cocaine to dissolve in your mouth occasionally, and at bedtime inhale the vapour from a pint of hot water to which a teaspoonful of Friar's Balsam has been added. After meals, take a dessert-spoonful of Scott's Cod Oil Emulsion as a nutrient and tonic.

NEMO.—We should say Bath or Clifton. There is no great choice apart from these two places on the line of route you mention.

B. SUTTLE.—1. We should prefer the hot water without the lemon. The latter can do no good under the circumstances you name. 2. Not if taken in moderation. 3. See second reply. 4. Nutritive food, and the use of the Cod Oil Emulsion recommended to "Prevention" above. 5. Wax in the ears is the most frequent cause.

NERVOUS EXHAUSTION.

PULVERMACHER'S World-Famed GALVANIC BELTS for the Cure of NERVOUS EXHAUSTION and DEBILITY, have received testimonials from three Physicians to Her Majesty the Queen, and over Forty Members of the Royal College of Physicians of London.

The distressing symptoms of NERVOUS EXHAUSTION and DEBILITY are speedily removed by means of **PULVERMACHER'S world-famed Galvanic Belts,** which are so arranged as to convey a powerful electric current direct to the affected parts, gradually stimulating and strengthening all the nerves and muscles, and speedily arresting all symptoms of waste and decay.

Dr. VINES, Fellow of the Royal College of Physicians, writes 19th September, 1885: "Having used MR. PULVERMACHER'S BELTS for many years, in the course of medical practice, I am in a position to speak of their great value as a curative agent in cases of nervous disease or functional malady where Electricity is likely to be serviceable. I am entirely convinced of their efficacy."

Dr. C. HANDFIELD JONES, F.R.C.P., F.R.S., Physician to St. Mary's Hospital, says: "I am satisfied that MR. PULVERMACHER is an honest and earnest labourer in the field of science, and I think he deserves to meet with every encouragement from the profession and scientific men."

Dr. GOLDING BIRD, M.D., Physician, Guy's Hospital, says: "I can hardly recommend MR. PULVERMACHER'S INVENTION too strongly to the notice of my medical brethren."

For full Price List and particulars, see New Pamphlet, "**GALVANISM: Nature's Chief Restorer of Impaired Vital Energy.**" Post Free from

PULVERMACHER'S
GALVANIC ESTABLISHMENT,
194, Regent-street, LONDON, W.

N. O. S.—Rest after your meals, avoid indigestible foods (such as pastry, cheese, and salt meats), take plenty of vegetable foods, and clothe warmly in Messrs. Ward's (of Bradford) Woollen Clothing.

PORTO.—If we can assist you further with any information, let us hear from you.

NEWMAN.—Follow the advice given to "Prevention" in the present number. Try also sponging the chest every morning with tepid water (or cold water with the chill taken off), and use brisk friction thereafter with a flesh glove or bath towel (Wilson's Hygienic). Clothe also warmly all winter in the Sanitary Woollen Clothing of Messrs. E. Ward & Co., of Bradford.

E. WARDEY.—We can quite understand your case. You did well not to be led into expense for the so-called further "treatment."

G. B. C.—Mellin's Food unquestionably; it is the best and safest for the child.

C. P. D.—Bayley's "Pomade Divine" is an application which should be tried for the relief of the pain after bruising—17, Cockspur-street, Pall-mall, London, W. It is an excellent remedy.

E. PARROTT.—1. Howie's Filter (Hurlford, Kilmarnock, N.B.) is that we recommend, as being effective, simple, easily cleansed, and not liable to get out of order. 2. The water in the case named is too hard.

C. CHIFFNELL.—1. We have not seen the appliance you name; but if it is merely a flannel belt with bits of steel sewn inside it, you may be certain it is "electrically" a sheer fraud and delusion. 2. The matter is under consideration.

F. M. M.—Dahl's Cakes (advertised in our pages) should be tried in your case. They form a simple remedy for most cases of constipation.

A. L. M.—Try the effect of taking fifteen drops Fer Bravais in water, thrice daily, an hour before your food, and a dessert-spoonful of Scott's Cod-Oil Emulsion with Hypophosphites, after your meals, thrice daily.

ALEXIS.—Read the pamphlet, "A Lecture to Young Men" (post free from Mr. Renshaw, 356, Strand, London, W.C., for 1s. 1d.), and you will find full information therein regarding the tonic and other remedies suitable for restoring health.

N. A.—Your only satisfactory plan is that of consulting a competent eye surgeon. We can send you address of a specialist, if desired, on receipt of a stamped addressed envelope.

W. H. M.—A quack production. No respectable English physician or surgeon advertises in the newspapers. If you wish address of a reliable London surgeon, see Rule 4 to correspondents at top of "Letter-box" page.

DRAUGHTSMAN.—See and follow out advice given to "Prevention" in the present number. If not bettered after a fortnight's trial thereof, write again.

THOSMOS.—Such appearances are due to enlarged blood vessels, and are very difficult of removal. Try washing with Bayley's Spermaceti Soap (17, Cockspur-street, Pall-Mall, London, S.W.), which is preferable to that you name. A little pure Lanoline may be applied to the part at night.

APOLLO.—1. Use the remedies recommended to "Peter Frame" in No. 247 HEALTH. 2. See advice to "Prevention" in the present number. 3. Certainly not; an egg does not contain the amount of fatty and other principles possessed by cod liver oil.

L. T. H.—Read the pamphlet, "A Lecture to Young Men" (post free for 1s. 1d. from Mr. Renshaw, 356, Strand, London, W.C.), and note the excellent and safe advice regarding diet and tonics therein contained.

W. B.—Change your stockings frequently, and wash your feet regularly night and morning in water to which a little "Sanitas" fluid has been added. After your meals, take fifteen drops Fer Bravais, in water, thrice daily.

J. B.—Send us stamped addressed envelope and we will have pleasure in writing you on the subject. There is little doubt that although you regard the matter with concern it may readily be explained as a natural occurrence. What you suspect has doubtless occurred despite your ideas to the contrary, and therefore you need not be uneasy. We will, however, write you more fully, on receipt of your envelope.

D. F.—Try the effect of taking fifteen grains citrate of potash in a tumbler of water, between your meals, twice daily. Avoid salt foods, cheese, pastry, and like indigestibles; and do not take any alcohol. If the symptoms continue of urgent nature, obtain from your druggist a belladonna suppository, and use this at bedtime.

T. H. M. W.—1. Messrs. Burroughs, Wellcome & Co, Snow Hill-buildings, London, E.C., are the wholesale makers. Order of your druggist, and give him this reference. 2. Iodoform is produced by the action of iodine on alcohol and carbonate of potassium.

C. M.—Read the pamphlet recommended to "L. T. H." in the present number of HEALTH, and use the Syrup of the Hypophosphites as therein directed, as a tonic suitable to your case. The other directions given in the pamphlet regarding diet, &c., should also be followed out by you.

WHAT SEVEN DOCTORS SAID.

WE give below copies of a few of the testimonials which have been voluntarily sent us by some of the most eminent medical men in Germany, a country which has produced a Liebig, a Braun, a Koch, a Liebnitz, and a Virchow — where the practice of medicine is under the direct supervision of a strict Government, where no proprietary remedies are allowed to be sold until they have undergone a thorough and exhaustive examination by a Government Medical Board, and where the seal of the licence is a guarantee to the people at large that the medicine is free from injurious ingredients, can be safely taken, and will assuredly prove beneficial in the diseases for which it is intended. Medical evidence from such a source should, and does, carry great weight, and the following testimonials from doctors in that country must add convincing proof to every reader in Great Britain and Ireland as to the virtues of the remedy named:—

"Dessau, Germany, Sept. 12, 1887.

"Gentlemen,—For many years I have suffered from inflammation of the kidneys, uric acid diathesis, with gout, &c., and each year was obliged to visit Carlsbad for temporary relief. I was also afflicted with a disease which alternated with the gout attacks, and that was sugar diabetes, from which I could get no relief, though I observed very strict diet rules. Chemical analysis of my urine showed albumen and sugar present. I began the use of your Warner's SAFE Cure, and the medicine soon began to cause an improvement in my condition. My appetite and sleep were better, and the pain in the kidneys less. A chemical and microscopical examination of my urine to-day shows that there is no trace of albumen or sugar, and at this writing I have finished my fifteenth bottle of the Warner's SAFE Cure, and have completely recovered, and am under many obligations to you. The medicine has relieved the kidney troubles; the cure I have looked forward to is completed, and my general condition of health is restored.

(Signed) "DR. GUSTAV WEBER,
"Geheimer Preuss, Sanitaetsrath."

"Berlin, Poliklinik, Liesenstr., 17, Sept. 30, 1887.

"Dear Sirs,—I received the Warner's SAFE Cure, and can report good results. I have used the medicine in my own case for rheumatism and palpitation of the heart, due to cold. It exerted its beneficial influence quickly, curing me of the rheumatism and improving the heart action.

(Signed) "DR. HOESCH."

"Wipkinger (near Unterstrass), July 20, 1887.

"Dear Sirs,—For a year and a half I suffered from chronic Bright's disease of the kidneys. I have now used 25 bottles of Warner's SAFE Cure. and kept strictly to the diet rules. I feel and look much better than I did. I am convinced that the improvement of my condition, appetite, and the gaining of new strength are all due to your Warner's SAFE Cure.

(Signed) "DR. EDWARD HIRSEL HUERLIMAN."

"20, Campestr., Braunschweig, Sept. 8, 1887.

"Dear Sirs,—A patient of mine has taken five bottles of your Warner's SAFE Cure, and is again able to give music lessons.

(Signed) "DR. C. EBERT."

"Wuerzburg, Oct. 18, 1887.

"Dear Sirs,—A pamphlet which I received called my attention to Warner's SAFE Cure, and I, though all my colleagues were against it, gave it a trial. I had a patient who suffered from kidney and liver disease; all medicine tried was in vain, and her case seemed to be hopeless until she began Warner's SAFE Cure, which proved most satisfactory. I shall recommend the Warner's SAFE Cure everywhere. (Signed) "DR. MED. N. BEYER."

"Langeln, Province Saxony, Oct. 11, 1887.

"Dear Sirs,—I beg to inform you that Warner's SAFE Cure has very much benefitted Mr. Hofmeister, who suffered from catarrh the bladder. In a case of liver disease it helped Mr. Libbold.

(Signed) "DR. BOETTCHER."

"Albersdorf, Sept. 25, 1887.

"Dear Sirs,—I have much pleasure in informing you that your Warner's SAFE Cure has been of great benefit to several patients of mine who have taken it. (Signed) "DR. BEUCK."

Warner's SAFE Cure can be had of all chemists and medicine-vendors, at 4s. 6d. per bottle; or of H. H. WARNER & Co., 86, Clerkenwell-road, London, E.C.

HIRSUTUS.—Superfluous hairs can only be satisfactorily removed by electrical means. Read the article on this subject in HEALTH No. 149. We can send, if desired, on receipt of stamped addressed envelope, address of a specialist who removes hairs in this way.

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C. AGAR.—To remove needles from the body, a Dr. Littlewood described in the *Lancet* a method which he had used successfully in seven cases for the removal of needles from the body. The part supposed to contain the needle is thoroughly rubbed over with an electro-magnet, so as to magnetize the metal, if present. A delicately balanced magnetic needle is held over the part. If the needle is present, its position can be ascertained by the attraction or repulsion of the poles of the magnetic needle. Having ascertained the presence of the needle, and rendered the part bloodless and painless, an incision is made over the needle; the electro-magnet is then inserted in the wound, and the needle felt for and withdrawn. If the needle is firmly embedded, the positive pole of a galvanic battery is placed on the surface of the body of the patient, and the negative pole in contact with the needle, which becomes loosened by electrolysis, and can then be easily removed by the electro-magnet.

ELLEN R.—We think you suffer simply from a non-healing wound. If the application of zinc ointment, on lint, to the parts daily (with Iodoform Soap used in washing) does not suffice to cure you, we strongly advise you to see a surgeon.

FOBO.—Take Grant's Oat Flour once daily, and eat whole-meal bread as a diet-cure for constipation, which may also be aided by your taking twenty drops Cascara Cordial once or twice daily in water, between your meals.

OPOR VAS.—The address of the filter-makers is Messrs. Howie, Hurlford, Kilmarnock, N.B. (See advertisement in our pages.)

JOHN JOLLY.—The following has been successfully used in cases of falling hair, by way of stimulating hair-growth: Bay rum, two ounces; glycerine, two ounces; tincture of cantharides, one drachm; oil of bergamot, half a drachm; sulphate of quinine, ten grains; water, four ounces. To be used every morning, and to be rubbed into the roots of the hair, all other oils and pomades being avoided. Use a soft brush only, and wash the hair once in a week or ten days, at night, with Spermaceti Soap (Bayley's) and tepid water.

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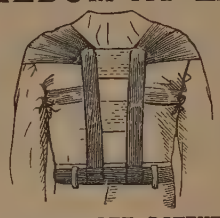
From Corsets  or Suspenders.

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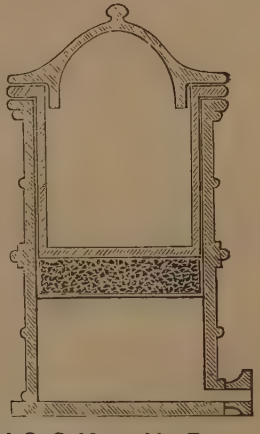

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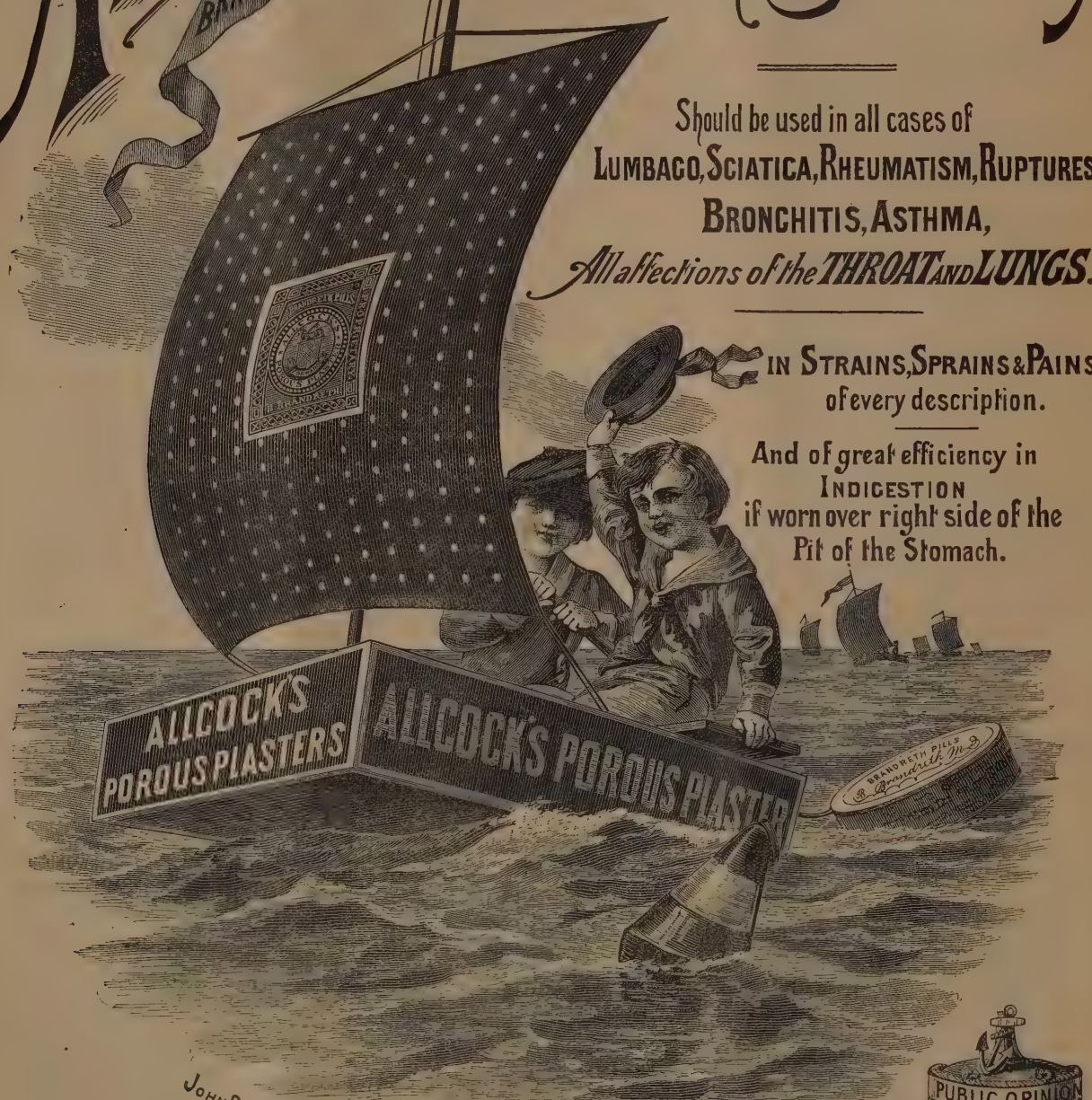

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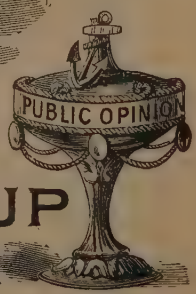

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[The above letter, dated Sept., 1886, is from a medical gentleman in extensive practice in a large city in the North of Ireland.]

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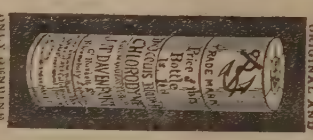

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◆ HEALTH ◆

EDITED BY

DR. ANDREW WILSON, F.R.S.E., &c.

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Notes by the Way

BY THE EDITOR.

"Health is the foundation of all our physical happiness."—*Herder.*

IN connection with the announcement made last week in the columns of HEALTH regarding the foundation of a Scientific and Medical Electrical Society, the *Lancet's* remarks on Sham Electrical Appliances will be read with interest. My contemporary says, "Not without reason does our contemporary, the *Electrical Review*, call public attention to the vendors of 'bogus electrical belts' and other worthless appliances constructed with the ostensible object of employing electricity as a curative agent. The following description, which we take from its pages, of two of these contrivances will be of interest as showing the way in which some self-styled medical electricians—men, we should hope, utterly ignorant of both medicine and electricity—will trade upon a capital of misrepresentations:

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"'First we have a specimen of a galvanic generator, which is made thus: A small oval frame of a bituminous nature contains a similarly shaped but smaller zinc plate ornamented in relief with "lightning flashes." Placed on this is a copper disc of similar shape, without any separating medium whatever between them. The combination is perfectly dry, and we need scarcely say that the apparatus sent to us is absolutely useless. The second is a magnetic appliance, which may be a so-called chest protector or anything else. Sewn up in a semi-circular piece of silk we find twelve feebly-magnetised pieces of crinoline steel, and this is all.

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"'Yet the price of the article is said to be 35s.' And a correspondent to the paper adds that upon the production and advertising of such rubbish £20,000 a year is profitably spent. Yet some of us think it strange that the 'medicine man' should be able to impose his antics upon uncivilized negroes. It would seem as if the ancient sarcasm were entitled to the rank of a universal truth, '*Populus vult decipi et decipiatur.*'" The public should learn once for all the fact that a belt made of flannel or other material, and possessing metal discs sewn therein is, in the absence of a battery for producing electricity, nothing short of a deliberate swindle.

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SPEAKING of cancer as a contagious disease, Mr. Wynter Blyth lately read a paper before the Society of Medical Officers of Health, in which he stated that he had held the belief of the possibility of cancer contagion for many years. The experiments of Langenbeck and Sollin on dogs were detailed, and some remarkable instances of infection of the human subject by accidental inoculation. The author argued that the infection of healthy parts by disease was a proof of contagion, so far, at least, as concerned the grafting of disease from part to part on the same body. The cancerous infection often started from wounds. In a number of cases the close contact of healthy and cancerous persons had apparently spread the malady.

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A HOUSE, the history of which he was well acquainted with, had three cancerous tenants in succession. A stranger visiting frequently the last tenant contracted cancer, and the niece of this person also developed cancer. The cases of family infection were too numerous to be mere coincidences, whence the necessity of flying to some mysterious and remote influence descending through the generations—remaining latent through the best years of life, transforming the cellular elements into corrosive cankers—when the doctrine of contagion gave a simple and intelligible explanation.

"THE TASTELESS APERIENT."

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HIGHEST AWARD
AT THE
INTERNATIONAL MEDICAL EXHIBITION, London, 1881.

"This Water contains the SULPHATES OF MAGNESIUM AND SODIUM in unusually large quantities. IT IS AN ADMIRABLE APERIENT WATER—one of the most powerful, indeed, that we have examined, and may be used with perfect confidence."—THE LANCET, *Sept. 26th*, 1885.

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AND OF ALL CHEMISTS.

REFERRING to the practice of those quacks who offer to send a free prescription for "nervous debility"—which recipe they philanthropically offer to make up for a pecuniary consideration far in excess of the value of the ingredients (real or imaginary) whereof the prescription is compounded—the following extract from the *Chemist and Druggist* will prove useful as an "eye-opener" to the public.

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A CORRESPONDENT, says our contemporary, "sends us various printed papers and the prescriptions issued by a Mr. Rose to people who are sufferers from 'nervous debility, loss of vital power and energy,' which the gentleman states he was himself afflicted with, but obtained relief by following the prescriptions of 'an Indian physician' whom he met in Lisbon. There are several unusual ingredients in the formulæ, and the methods of compounding them are the most ridiculous imaginable. Pareira brava, golden seal, cinchona, potassium bromide, and lithium carbonate are the ingredients of the powders which are to be taken, and they are prepared by a roundabout method of decoction, infusion, and evaporation.

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PILL No. 1 is composed of 'cocain, jerubebin, helonias dioica, gelsemin, ext. ignatiæ amaræ (alcoholic), and ext. leptandra'; while the ingredients of pill No. 2 are 'ext. buchu, ext. nux vomica, ext. damina, pulv. cascara amarga, and ext. diospyros kaki.' We cannot follow Mr. Rose in his extremely lucid description of the manufacture of these pills further than to say that they are to be made by the method of 'percolation, by displacement, with the customary apparatus,' and are to weigh four grains. We cannot tell our correspondent where he can obtain the jerubebin.

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THE other ingredients are more or less common. *Helonias dioica* is the melanthaceous devil's bit, or false unicorn root, of the American eclectics. The root is used for disorders of the reproductive organs, especially of the female. Damina stands, of course, for damiana. Cascara amarga, or Honduras bark, the product of *Picramnia pentandra* (N. O. Anacardiaceæ), is used as a tonic in scrofula and syphilis. It was tried in this country about five years ago, but we have not heard of any good results from it. The only diospyrus which we know to be used in medicine is *Diospyros virginiana*, or persimmon. The bark of this plant is used as a tonic and astringent, chiefly in cases of chronic dysentery. Mr. Rose has found, of course, that chemists do not compound his prescriptions properly, and that his 'fellow-sufferers' should send him 14s. 9d. for a supply of medicine!"

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I SHOULD imagine that by this time this quack-prescription trick will have been completely exposed. If people will pay exorbitant prices for some mysterious decoction, which, by the way, is not by any means likely to act as a remedy in the way described, theirs alone must be the chagrin on finding themselves swindled. If the quack can compound his precious mixture, surely a qualified chemist must be equally able to make up the dose! It is the mystic herbs and "valuable ingredients"—known, of course, to nobody save the quack—which, wondrous to relate, baffle the highest exploits of modern pharmacy!

Original Essays

"Life is not to live, but to be well."—*Martial.*

CHEAP AND WHOLESOME FOOD.

By DR. A. J. H. CRESPI.

Sometime Editor of the "Sanitary Review."

NOTHING would have astonished our forefathers more in those good old days, which everyone praises, though thankful they have passed away, than the profusion with which all kinds of food are conveyed from the remotest parts of the earth to our shores. The perishable productions of the tropics appear on our tables side by side with the not less perishable foods of sub-Arctic regions. Famines are impossible, while it seldom happens that there is any great inequality in the retail price of food in different districts of the same country. Milk and butter are actually often much cheaper in a great town, with 400,000 inhabitants, than in a village, and fruit and vegetables are generally scarcer, and more expensive in the latter. The epicure rubs his hands with delight, and the man who passes his time singing the praises of the present is equally joyful. The change has drawbacks. It is *not* unmixed good that thousands of ships should bring to our shores the costly foods of distant lands; and it is *not* a great step in civilization that small shops are stocked with rich viands tempting to the appetite, pleasing to the eye, but ruinous to the pocket, and destructive of health. We have advanced, and are advancing, but everything new is not necessarily good.

Human nature is much the same everywhere, and in all ages. In man, it has been said, there is a great deal of human nature. Modern epicures are not worse than those of three centuries ago, nor than those of Rome in the days of her decadence. Our ancestors, content with roast beef and strong ale, would gladly have had still more expensive and luxurious foods could they only have obtained them. The artisan of our day who envies the good fortune of his employer, and complains that the latter has fish, flesh, poultry, rich fruit, and expensive wine, while he himself has only meat, stale vegetables, and muddy ale, would, were he in his master's place, run to as great lengths. No class can claim a monopoly of virtue; and we dare not pretend that the rich are more abstemious and contented than the poor, but we should equally hesitate to give the poor credit for greater virtue.

Famines are not again likely to happen in civilized countries, and railroads and steamships have equalized the cost of food in all parts of the same country. We can go farther and admit that luxuries and dainties are within the reach of what a few years ago would have been called the poorest classes; nor do we fear contradiction when we say that, taking things as a whole, cheap and wholesome food is more within the reach of all classes in England than was formerly the case. So far the condition of the nation is improved. But, observe, the evil of having fresh tastes developed, and greater opportunities of gratification is not trifling.

JENSEN'S COD LIVER OIL is acknowledged as the best because it is the only Oil made from absolutely fresh Livers. It prevents all Coughs, Colds, Asthma, Bronchitis; it makes the Digestive Organs act, and is the only remedy of any value in cases of Consumption; it is sweet and pleasant—cannot by any possibility cause any aftertaste, while all its nourishing virtues are retained. Of all Chemists, &c., in bottles, each Wrapper bearing the Registered Trade Mark (an Iceberg) if genuine, at 1s., 2s., 3s. 6d., and 6s. 6d.; or, post free, of HERTZ & COLLINGWOOD, 101, Leadenhall-street.

Food which our grandfathers would have been satisfied with does not content us, while that which we eat will not be approved of by our descendants. Civilization brings evils as dreadful as those it banishes. There is incessant motion, but not always progress, and changes may be for the worse as well as the better. Walter Bagehot, in "Physics and Politics," put this most impressively in a few sad words:—"How painful is the conclusion," he said, "that it is dubious whether all the machines and inventions of mankind have yet lightened the day's labour of a human being. They have enabled more people to exist; but these people work just as hard, and are just as mean and miserable as the elder and the fewer."

It is foolish to lavish praise on the inhabitants of simpler and ruder countries. They have not the Englishman's wants, and are happier; but their happiness comes from ignorance of evil, not from self-restraint. Swiss and Scotch mountaineers soon become adepts in civilized vices. The Red Man sacrifices liberty, health, all he has, for the fire water, which his unbridled appetite cannot resist. Immigrants from the soberest countries of Europe drink beer, whenever and wherever they can get it, as soon as they settle in England, and become as drunken and worthless as the worst of our countrymen. Look at it how we will, ninety-five men in a hundred are virtuous and abstemious as long as, but not longer than, they are debarred from animal indulgence; when the opportunity for sensual gratification comes habits change, and they eat and drink even more gluttonously than the persons who have had every facility for unrestrained indulgence from childhood. It is a painful commentary on the blessings of civilization, that so little are the masses of a nation able to use without abusing, that discoveries and inventions that should make life happy, prosperous, and free from care, are actually those that bring a fresh crop of evils and retard the advance of mankind.

Something has been done by writers of eminence, and by the London and Provincial Press, to bring home to our countrymen the sad truth that profusion and waste may go hand in hand with increasing perfection of the arts and with the advance of science, so that at the end of twenty years every step forward may be counterbalanced by a backward one. Greater simplicity of diet has been insisted upon, and the advantages of cheap and wholesome, though neglected foods, made much of. Little good comes from these efforts, perhaps because the teachers seldom practise what they urge upon others. As long as those who preach admit that what they consider good enough for the poor is not good enough for themselves, the working classes may listen, but they will copy the example of their teachers, and not act upon their precepts.

It has been something that sanitary writers, the medical profession, and periodical literature have been on the right side, and have spoken out bravely. There have been exceptions; for example, that lively and delightful writer, Lady Barker, late honorary Superintendent of the School of Cookery at the West End, in some of her widely-circulated books and articles advocated a more generous diet than generally given to boys, and hazarded the opinion that they seldom knew what it was to be well fed. I read her opinion with amazement, having come to a different conclusion from noticing the voracity with which growing lads consume all that comes in their way. Till Lady Barker taught me better, I fancied boys of the richer classes never knew what it was to be hungry.

The most startling book on the subject of food was published ten years ago, and was entitled "A Manual of Diet and Regimen in Health and Disease." The author, Dr. Thomas King Chambers, Consulting Physician to St. Mary's Hospital, laid down certain rules commended by the *British Medical Journal*, the *Daily News*, and *The Rock*, but which I thought *most objectionable*. It would have been the correct thing for a man in his position to praise simple food, and denounce luxury and extravagance, but not necessarily to practise what he commended. But that a man who, among other things, is Honorary Physician to the Prince of Wales, and certain to be quoted as a great authority, should sound the praises of good living, late rising, splendid dinners, expensive wine, and many meals was startling. There is no need to tell people to eat and drink half-a-dozen times a day all the luxuries of the season, and so ruin health and digestion. They will do that fast enough, should the opportunity present. But it is the duty of a man whose position gives his utterances weight, and whose special knowledge teaches him what is right, though he may not practise it, to raise his voice in solemn protest against the sensuality, over-eating, and free drinking of this luxurious age and nation.

The folly of men, whose epicureanism is a reproach to our age, when they are so highly placed that their random statements receive the eulogiums of influential publications ready to accept anything as gospel coming from Court physicians, peers, and bishops, may bear fruit we can hardly foresee. Were our countrymen content with three simple and wholesome meals a day; were they to renounce tobacco, alcoholic stimulants, and rich foods of all descriptions, there would be an end to complaints of the dearness of food, and few persons would be unable to obtain abundance of economical, nutritious, and wholesome food.

"EX LUCE LUCELLUM."

A Short Account of the Chemistry, History, and Manufacture of Lucifer Matches.

By E. Godwin Clayton, F.I.C., F.C.S.,
Member of the Society of Public Analysts, &c.

FOURTH AND LAST PAPER.

We now come to an important date, 1827, in which year the original "lucifer matches" or "Congreves" (after Sir W. Congreve, Bart., the inventor of the rocket bearing the same name) were devised by John Walker, of Stockton-on-Tees. These matches were non-phosphoric, consisting as they did of a wooden splint or card tipped with a mixture of potassium chlorate, antimony sulphide, gum, and starch; but in name, and also as being the first matches to ignite by *simple friction*, they must be looked upon as the direct ancestors of the lucifer match of our own day. To ignite these matches, friction upon glass-paper or sand-paper was necessary, the antimony sulphide being oxidized at the expense of the potassium chlorate. Unfortunately, the tips of the matches frequently came off during the friction, and, then igniting, spirted about dangerous kindled matter. The sulphureous and antimonial vapours were also highly injurious and offensive. In 1830 there was a return to the principle of the oxymuriate match, S. Jones, of the "Lighthouse," in the Strand, having patented his "Prometheans." These were short rolls of paper with a little potassium chlorate and sugar at one end, a thin glass globule of strong sulphuric acid being attached at the same point. When the sulphuric acid was liberated

by pinching the globe, it acted on the mixed potassium chlorate and sugar, producing fire.

At last, in 1833, phosphorus was successfully substituted for the various other less easily oxidizable bodies, such as antimony sulphide, &c., which had previously been used; and in this year the phosphorus friction match of the present day was introduced on a commercial scale in several distinct centres, notably by Preschel, of Vienna, and Moldenhauer, of Dresden. Although these and other large factories were established, the match industry was in its early days for the most part carried on by poor families, who purchased the necessary materials, in small quantities at a time, and sold from day to day the product of their labours.

Match manufactories multiplied, however; hand labour was gradually replaced to a great extent by the use of machinery; and, by degrees, various improvements were introduced during the next three decades. Unfortunately, a terrible disadvantage was found to attend the use of ordinary phosphorus. Persons engaged in match-making suffered from an affection of the lower jaw, which frequently terminated in *necrosis* or death of the bone; this being the direct consequence of continued exposure to air highly impregnated with phosphorus fumes. A graphic account of this disease was given by a writer in the *Quarterly Journal of Medical Science*:—"This disease is of so insidious a character that it is at first supposed to be common toothache, and a most serious disease of the jaw is produced before the patient is fully aware of his condition. The disease gradually creeps on until the sufferer becomes a miserable and loathsome object, spending the best period of his life in the wards of a public hospital. Many patients have died of the disease; many, unable to open their jaws, have lingered with carious and necrosed bones; others have suffered dreadful mutilations, considering themselves happy to escape with the loss of the greater part of the lower jaw."

The ravages of the "phosphorus disease" were also referred to in the first Report issued by the members of the Children's Employment Commissions, 1862; and, public attention having been drawn to the matter, precautions were adopted which undoubtedly had the effect of greatly remedying the evil. It was found, firstly, that the phosphorus fumes could be prevented from accumulating, by a thorough system of ventilation, open windows, fan-lights, and ventilation shafts being among the means employed; secondly, that the highly deleterious effects of the phosphorus fumes were largely neutralised by impregnating the air of the factories with the vapour of oil of turpentine; and, thirdly, that by covering the mouth with sponge inhalers, and by washing the hands night and morning in a solution of soda, the "dippers" (the workers most likely to be affected) were rendered proof against the terrible jaw-disease.

Other serious objections to the use of ordinary phosphorus were found to be its extreme inflammability, both by friction and at low temperatures, this property having led to very many accidents and fires—matches carelessly thrown about being so easily ignited; and the circumstance that it is a deadly poison. Children have frequently died in consequence of having sucked the coloured ends of lucifers, and quite recently there have been two cases (one fatal) of poisoning of adults with lucifer match-heads at Hexham and at Newcastle-on-Tyne.

Now, *all* the disadvantages attending the use of ordinary or vitreous phosphorus are obviated by using, instead, the allotropic variety of phosphorus discovered by v. Schrötter in 1845. Red or amorphous phosphorus is not poisonous; workpeople using it are not liable to be affected with jaw-disease; and, when alone, it is completely non-inflammable by friction or by heat, at anything less than a very high temperature. Matches containing amorphous phosphorus in place of ordinary phosphorus were made in 1851 by Foster and Varwa, of Vienna, by Coiquet et Fils, of Paris, and by Bell & Black. Some of these matches were exhibited at the Great Exhibition of 1851, but somehow or another their use did not become general, and they did not remain long in the market.

Four years later, however, in 1854, Preschel, of Vienna, took up a happy suggestion made by Böttger in 1848, to the effect that friction matches might be made capable of inflaming *only when rubbed on an especially prepared surface*, and sent into commerce matches of this description. The manufacture of these "*safety matches*" was greatly improved by Lundström, a Swedish manufacturer, to whom it occurred to put the *oxidizing agent* on the *match*, and the amorphous or red phosphorus on the *box*. The match would thus ignite only when rubbed on the "rubber" on the box. The dipping composition for the matches consisted of a mixture of potassium chlorate, antimony sulphide, and glue; while the paste for the rubber contained amorphous phosphorus, powdered glass, peroxide of manganese or antimony sulphide, and glue. Safety matches of this description (introduced, as has been shown, in Sweden) have long been extensively used on the continent; and, indeed, an act was passed in Denmark, in 1875, forbidding the use of any but safety matches, while a similar act was passed in Switzerland in 1882. Less rapid progress has been made in England. The manufacture of safety matches by Lundström's process was patented and introduced here by Bryant & May in 1855; but, although the use of safety matches has greatly extended in this country, there are still many consumers who prefer a match which lights on any rough surface. Nevertheless, the advantages of the safety match are so obvious, so manifold, and so great, that it is probable it will in a few years entirely supersede the match made with vitreous phosphorus. A better instance than the safety match of the application of scientific principles to the wants of everyday life can, perhaps, hardly be adduced. The "*allumettes androgynes*" of Devilliers & Dalemagne may be mentioned here: they were a modification of the same principle. Amorphous phosphorus was at one end of the splint, and potassium chlorate at the other. The splints were broken in halves, and ignition was produced by rubbing the two ends together.

From time to time, since the jaw-disease disclosures, there have been attempts to manufacture lucifer matches entirely without phosphorus. A match-composition introduced in 1857 by G. Canouil consisted of potassium chlorate, lead peroxide, iron bisulphide, and either gum, dextrine or glue. Mixtures of sulphur, antimony sulphide, and paste, together with potassium chlorate, and of precipitated antimony sulphide with lead sulphocyanate, have also been tried: while the researches of Wiederhold indicated that potassium chlorate and lead thiosulphate might be employed. The lead fumes would, however, be very undesirable.

The writer's object will have been gained if some idea has been conveyed of the general principles on which the match manufacture is based; of the real importance of this manufacture; and of the numerous stages of development through which that most useful little article, the lucifer match, has passed,—from the crude productions of a bygone age to the well-made safety match of the present day.

Personal Health

"Be timely wise;
With health all taste of pleasure flies."—*Gay.*

DYSPEPSIA AND THINKERS.

INTENSE brain-workers are dyspeptic; the exceptions to this rule are very rare. As we review the biographies of great men, dyspepsia appears to have been their most common enemy. "Tristes philosophi et severi," said Varro. The greatest impediment to advancing thought is the stomach. Dyspepsia is the philosopher's cross, which grows the heavier the higher he ascends. Those who concentrate all their energies on one thing only, never leaving it, do so at great physical expense. When we see a man who has achieved great success in any department of life, burdened with dyspepsia, or consumption, or premature age, there comes the question with full force—"What shall it profit a man if he gain the whole world and lose his life?" Who can think of Tycho Brahe confining himself for a score of years to his observatory, scarcely ever leaving it, without reflecting on the sacrifices of health he made to science.

Men do not appear to be very different as we look at them, but, as Mr. Galton has shown, one man may possess several hundred times the mental capacity of another. But the unfortunate part of it is that the superior intellectual do not possess stomachs several hundred times as powerful as their less favoured brethren. Voltaire wrote to Lord Chesterfield: "My Lord Huntingdon tells me that you have a good stomach, which is worth more than a good pair of ears. I don't know which of these three evils is worst—to be blind, or deaf, or not to be able to digest."

"I am convinced digestion is the great secret of life," said Sydney Smith; "and that character, talents, virtues, and qualities are powerfully affected by beef, mutton, pie-crust, and rich soups. I have often thought I could feed or starve men into virtues or vices, and affect them more powerfully with my instruments of torture than Timotheus could do formerly with his lyre." Hippocrates and Galen said the same.

"Sicklied o'er with the pale cast of thought," is an expression Shakespeare used; and how well it applies to the dwellers and workers in towns, carrying their everlasting crosses of keen mental competition. Dyspepsia, despondency, melancholy, biliousness, mental depression, are without a doubt the lot of those who attain greatness, as well as of only too many in society at large.

Here is a grim story; we get it from Smiles:—One day a poor broken down dyspeptic consulted Abernethy. The doctor looked at his tongue, felt his pulse, and inquired after his symptoms. "Well," said the frank Abernethy, "I don't think there is much the matter with you. You want stirring up; you want cheerfulness. Go and see that clever fellow Grimaldi; you will get a good hearty laugh; that will do you more good than physic." "Alas!" said the patient, "*I am* Grimaldi!"

What is dyspepsia? To feel you have a stomach—that is dyspepsia. He who has never felt the pressure of this organ is blessed beyond measure. The fact that the great men of modern times have suffered so generally from gastric debility is a poor compliment to the care they took of themselves. Goethe protested against the idea of philosophers being dried up healthless creatures. The dwellers of the towns in ancient Greece enjoyed, we believe, fairly good health, but physiculture was not, as it is with us, relegated to a second place. There are no public games, wrestling matches, &c. We have much yet to learn.

For the comfort of those whose food is their dread, we can now offer the digestive power of the lower animals. Physiological chemistry has been able to bottle up the digestive principles of the calf, pig, sheep, &c., and in such conditions that they are most active. There is a pepsin in scales one grain of which digests two and a half ounces of albumen. This pepsin is best taken in Tabloids, which are indeed effective, pleasant to take, and certain to bestow relief in those cases where the stomach is unable to do its normal work, providing of course there is no organic disease.

SIR JAMES PAGET ON CANCER.

IN the course of a recent "Morton Lecture," Sir James Paget ventilated certain interesting views regarding the nature of cancer and allied diseases. These opinions become of public importance, not only from the fact that the case of the distinguished German sufferer enlists universal sympathy, but because if, like leprosy, cancer is to be regarded as a disease which is on the increase, it is desirable that the fullest information should be circulated regarding its nature and its conditions of growth and development. Sir James Paget, amongst other useful pieces of information, tells us that what is known as "cancer"—a compound term, by the way—presents a dual likeness of some practical importance in assisting the comprehension of its true place in the category of human ills.

Thus there is a first resemblance presented by cancer to new growths of a simple and innocent kind. When any new growth appears in the tissues of an animal the scientific mind desires primarily to satisfy itself regarding the relative danger to life which such a development entails. It may belong to the list of growths which are innocuous, and which, save for secondary circumstances of size, pressure, or other conditions, do not seriously or at all threaten the physical welfare of the individual. Contrariwise, the enlargement may be malignant in character. From its very constitution it endangers life by the destruction of organs and parts, and by the concomitant general weakness of frame which it produces. In this later category, needless to say, cancer is to be ranked; although, as Sir James Paget points out, the analogies between the innocent and the malignant type of growths are clearly observable. It may be a probable result of future investigations that the stages whereby the dangerous varieties become evolved from the harmless will be fully demonstrated. Indeed the labours of the distinguished London surgeon whose opinions we have referred to tend of themselves towards the elucidation of such a relationship.

If this one point be successfully investigated we may readily understand how the mysteries which environ the beginnings of cancer may stand a fair chance of satisfactory explanation. An examination of certain kinds of cancer by the aid of the microscope, for instance, may

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Foods, Drugs, Sanitary Analysis, &c. Special attention is devoted to the Examination and Analysis of all descriptions of Water.

reveal the fact that the cells, or minute bodies composing the growth, are but exaggerations of the normal and natural cells of the part affected. Here we are brought face to face once again with the idea that all such diseases are more or less clearly perversions of natural structures. It will then remain for science to show the causes of such departure from the normal and natural conditions of things. When this much has been accomplished, cancer will rank among the understood facts of medicine. The application of plain principles in science in such a case will have dissipated a mystery, and placed a clue to the treatment of the disease in the hands of medical men.

A second, and even more important, relationship of cancer to other diseases is, however, noticed by Sir James Paget. This latter feature, he maintains, tends to show its resemblance to the ailments which are known to be produced by the growth and multiplication within the body of "germs." We know that fevers, consumption, and many other diseases are produced by these omnipresent microscopic particles. One case of fever breeds its germs by the thousand, and these new germs are ready, when neglect of sanitary precautions prevails, to start on their mission of fever-multiplication. Within the category of germ-produced disorders then, it would appear, cancer may show cause to be included. If we leave out of reckoning the report that a German physician has discovered a germ which he considers to be the true *cancer-bacillus*, we may, nevertheless, on general principles, assume that the germ-origin of cancer is, at least, a probability. Sir James Paget has pointed out that, like certain germ-produced diseases, cancers are diseased growths, are self-maintaining in character, and possess each its definite characteristics, life-history, and end, as if, in truth, it represented in itself a living form. Analogy, as Darwin long ago asserted, may be a deceitful guide; but, pursued within proper limits, it is a valuable aid to the discovery of truth.

The "Morton" lecturer wisely dived into the domain of natural science in seeking for some clue to the production of cancer in man. He found the object of his search within the sphere of the botanist. The plant world, like the animal kingdom, does not escape the influence of disease. Amongst the disorders of plants certain forms of tumours are to be classified. On beeches and cedars woody growths are not uncommonly developed. The history of these swellings on the trees is very instructive. They represent sleeping buds or undeveloped "eyes," which, instead of coming to full fruition in a natural way, so as to form part and parcel of the structure of the plant, have awoke to a kind of unnatural vitality, and have developed their wood in an altogether purposeless fashion. Here, an undeveloped and latent part of the tree has become a vegetable tumour. From the mere fact of a want of growth at the proper time or in the proper place what should have become a natural structure develops into an essentially unnatural and morbid product. Now, in the case of the human frame and its ailments it is not hard to discover a close likeness between certain growths and the production of the swellings on the trees. Such tumours in trees we may regard as corresponding to the relatively innocent growths in animal tissues. They are traceable as simple malformations of natural structures, and in this light show little or no tendency to develop into malignant and life-destroying elements.

But on the tree growths of quite another kind are lial[illegible]elves. The mother gall-fly, by aid of a pointed tube, pierces the tissues of the tree, and deposits her eggs in the punctures thus made, while, as each egg is placed in its position, an irritating fluid is injected by the insect into the plant substance. As time passes we see the vegetable matter thus treated swelling prominently to form the well-known "gall" of commerce, and within this excrescence the young gall-fly passes the earlier stages of its life-history. Over a thousand different kinds of galls are known, each varying from its neighbours, and each depending for its character on the special kind of virus or fluid which the parent fly injects into the substance of the tree. Now, an examination of the nature of a gall shows it to be composed of the natural elements of the tree altered and modified by the irritating substance of the insect-body. The gall is continuous, as Sir James Paget puts it, with the natural tissues of the plant; but it is yet different, and often very much so, from these tissues. The likeness between growths which in animal histories are to be named cancerous and those produced by the gall-flies is too obvious to escape the intelligence of the most casual observer. As the plant substance appears to be changed into a diseased type by the act of the insect, so, through some analogous action in the case of cancerous growths, the variations of these tumours from the natural structure of the animal body may be explicable in theory at least.

Sir James Paget would assume the existence and operation of some new and distinct element or power in disease-production to account for the appearance of a disease presenting characters so marked and distinct as are those of cancer. There is yet another point of importance to be considered however. It is obvious that as galls will not grow anywhere and anyhow—each demanding its own conditions—so, it may be urged, cancer and allied diseases require each its special environment wherein the morbid material alone can flourish and multiply. In short, if we require the seed we also need a soil. It is in this latter phase of the matter, as Sir James Paget points out, that the most hopeful results of further and accurate study are to be expected. Certain cancers are thus almost peculiar to old age, or to certain marked epochs of life. Are we to assume in such a case that the special conditions of their growth are connected with states of the tissues dependent on age? To this query an affirmative reply must, it seems, be given. Again, it may well be that parts in animals which have not attained their full development, or which have gone astray from the normal course of growth, are rightly regarded as specially liable to the inroads of disease. In such cases the unwonted development may supply the condition required for the lighting up of the ailment. Even in the scars of former injuries cancer may occasionally appear; and another circumstance is thus added to the list of conditions under which this disease may become developed.

The subject is a wide and complex one, and, as we have seen, its terms are far from settlement. The public, however, should be made aware of the efforts science is making to solve the knotty problems of cancer-production. It is in this light that we have discussed the question, and it is equally in the public interest that we may cordially wish the scientists every success in their mission, which is calculated in due season to minister to "the relief of man's estate."—*Glasgow Herald*.

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"In bringing up a child, think of its old age."—*Joubert.*

SCARLET FEVER.

REGARDING this disease, Dr. B. W. Richardson has the following instructive remarks in the last issue of his *Asclepiad*:—It will be a good day when the three so-called distinctive forms of scarlet fever, viz., scarlatina simplex, anginosa, and maligna, shall be considered as one: for although it is strictly true that there are certain cases which, from the first to the last, adhere to one of these characters, there is no definite rule determining the conditions under which the definite forms are manifested.

I have kept notes for thirty years of every fact that I have observed bearing on this subject, without arriving at any absolute conclusion why differences of type should be maintained so persistently in different cases. That there is no difference in the quality or quantity of poison in the respective types is clear; for I have many instances before me of fatal scarlatina maligna, ending in a few hours, in which the disease was contracted from communication with cases of the mildest kind. On the other side, I have evidence of examples in which exposure to malignant scarlet fever has excited the mildest type in other persons disposed to the malady. The unity of the poison is, moreover, shown in the circumstance, that the frequent after effects of the acute disorder, viz., uræmia and dropsy, may occur after any type. This is the general rule; but I should add to it, nevertheless, that in so far as my experience teaches me, acute uræmia following within a few days or hours on a scarlatina attack is most frequent when that attack has assumed the aspect of malignancy; while the prolonged anæmic albuminous dropsy succeeding to a scarlatinal attack is most common after one of the milder forms of the disorder. The experience of other observers may be contrary to mine in this respect; but although such difference may exist, the general fact is not shaken, that the same sequelæ may follow different phases of the acute disorder. It is also worthy of notice that the occurrence of scarlet fever, in any of its forms, is equally protective; in other words, a patient who has suffered from simple scarlet fever is as well protected from the malignant type of the malady as one who has already suffered from the malignant type. This fact is such a matter of common experience that it need not be dwelt on, except to enforce the identity of the poisons in both sets of cases.

That neither season nor peculiar known meteorological change is the cause of the distinction in type is also, I think, established. It is true that sometimes a great epidemic of the disease breaks forth, and proves largely fatal, owing to the occurrence of numbers of cases, malignant in kind. But again, in these illustrations, if all the facts be gathered together, there is a proportionate number of mild and of severe cases. It happens, not uncommonly, that a district of country remains for many years free from an epidemic visitation of scarlet fever. In the period during which the disorder is absent large numbers of children are born, each one susceptible to the affection. Suddenly the disease is set up by the introduction of a case into the locality; and, the train once lighted, every house becomes the *habitat* of the dreaded visitor. In such epidemics as these, there are always a large number of malignant cases and a large mortality; but there is an equal number of milder cases always to be found, if sought for with care; and even a larger number of mild than of malignant cases, in proportion to the population attacked. My own observations would lead to the opinion that the proportion of malignant to mild cases is as one to five; but this is a point which requires much more elaborate investigation than I have been able to bestow upon it; for, if there should be a law in the background regulating the proportion of malignant and benign cases in a given number of sufferers, the establishment of such law would give a new reading to the cause of difference.

That the locality in which the disease occurs influences the type seems to me unproven. I thought at one time, certainly, that in low dirty houses the malignant tendency was most developed; but further observation has dispelled this view. For although it must be conceded that nothing more materially interferes with the successful treatment of the disorder, in all its forms, than the confinement of the patient in a foul unventilated chamber, I must confess to have seen the mildest phases of the complaint passed through in such places, while, on the other hand, I have observed the severest forms of malignancy in the rooms of the well-provided classes, where the strictest cleanliness and the most perfect ventilation were provided.

Once more, the physical condition of the patient at the period of attack seems as little to influence the course of the malady as the external conditions by which he is surrounded. I have known, and every other practitioner, I doubt not, has known instances, in which the whole of a family of children having been attacked, the weakest of the members, the scapegoat of the whole, has passed through the stages of the fever with impunity, while the strongest have fought for every inch of life, or have actually succumbed. And this same observation holds good on a larger scale. I can recall no fact to indicate that the indifferently fed children of the poor are either more or less susceptible of scarlet fever than the well-fed children of the rich, or are more or less susceptible of the malignant forms of the affection.

Lastly, there seems no evidence to support an hypothesis of hereditary tendency to any specific type. Indeed, this hypothesis is negatived by the simple circumstance that, in children born of the same parents, the disease may assume different types. I have often put the question as to the type which parents of affected children suffered from, but the answer has never conveyed any such fact as could show the sign of an hereditary claimancy to a specific type. I have, however, known a whole family insusceptible to the malady. A member of this family, on one occasion, slept with a person suffering from the fever, and escaped. A servant was introduced into the house, and soon afterwards passed through the fever; she was tended by the family, one of whom conveyed the disease to another family, showing no sign of the disease herself. This insusceptibility appeared also to have been inherited from the parents of these children; the father and mother having, throughout their lives, escaped from the contagion, although their sisters and brothers had been sufferers from it.

Admitting, therefore, the view that hereditary predisposition to any specific form of scarlet fever does not exist, we may accept that, in certain very rare cases, there is manifested an entire insusceptibility of the disease, and that this insusceptibility is hereditary.

If, then, we allow (and I think we are bound to allow

as much), that the variety of type of scarlet fever is not dependent on differences of poison, nor on meteorological state, locality, physical condition of the patient at the time of infection, age, nor hereditary taint, where shall we look for an explanation of the singular phenomenon, that of two children attacked at the same time, the one may be comparatively well at the period when the other lies dead, each event being encircled in the space of a few days? The question is most profound and important, but at this stage of our knowledge we must leave it with the bare supposition that there is, in the organism itself, a directing cause which either modifies the violence of the poison or intensifies it; a cause allied to that agency which altogether prevents, in nearly every case, a repetition of the disease in those who have passed through its stages, whether gently or severely.

"THERE'S music in the heir," remarked a fond father as his young and only offspring made his initial attempt at singing.

VENTILATED HATS.—We have noted with interest the method of hat-ventilation adopted by Messrs. Leon Fossett & Co., 83, Regent-street, London, W., in which, by an ingenious adjustment of the lining, the interior of the hat is permeated by air, and the head thus kept cool. If it be true that decay of the air is due to badly ventilated and tight-fitting hats, the expedient of Messrs. Fossett should tend to promote social comfort in this respect. These hats are comfortable to wear; are of light and elegant make, and are in every way worthy of being tested and tried by both sexes.

NERVOUS FAMILIES. — Dr. M. J. Séglas lately laid before the Medico-Psychological Society of Paris the genealogy of two families in which at least twelve members out of thirty-four were deranged in mind. The following sentences contain a conclusion which he is anxious to impress. It has been often remarked that persons with a nervous heredity often intermarry; this is now generally admitted. What explanation can be given? Are these unions simply the result of chance, or of different social causes (family reasons, considerations of fortune), or are they dictated by a sort of fatality, or natural law? In admitting the possibility of other causes (and it is this which renders the question so difficult) it is insufficient to explain the innumerable cases of convergent heredity, observed by the doctors in all times and countries, and which are only the result of these fatal unions. On the other side the illegitimate unions which present characters precisely similar are not to be explained by all these particular causes, and are more demonstrative of the fact upon which we insist. Besides, the repetition of the same facts in a single family, in the same generation and in the following generations, in nearly all the members of these generations, and sometimes even several times in the life of the same individual, seems to us to be a proof of what we advance. In the particular case which we report, this unhealthy attraction which draws persons with neurotic tendencies to each other by a sort of community of ideas and sentiments, is the most manifest. It is found again in all the generations, in all the members of each generation, and even several times in the same individual. We find in it also consanguinity, which is on this account the more demonstrative. Moreover, these unions between blood relations are not rare, and thus create a convergent heredity of the worst description in the descendants.—*London Medical Record.*

Healthy Houses

"A happy home must be a healthy home."—*Anon.*

HOW TO KEEP OUR HOUSES WARM.

THE following letter from Mr. A. T. Fletcher, H.M. Chief-Inspector under the Alkali, &c., Works Regulation Act, appeared in the *Times* of a recent date:—

It was during the severe winter of 1880 that I determined, if possible, to find some way of aiding the usual open fires in warming the air of my house. When the weather is really cold, our houses seem to be like sieves for the admission of cold air through leaky windows and doors ajar, the fire, with unchecked chimney draught, being the ever-active pump, drawing it in from all sides, and driving it up, while the heat given out is but feeble and quite local. With what reluctance does one leave the fireside at night to traverse the cold passages and staircase and enter a freezing bedroom, cold and draughty, even if a newly-lit fire may blaze in the grate! Yet sufficient heat to warm the whole house has been sent up the chimney of every room where an open fire burns.

The plan I have adopted to improve this state of things has succeeded beyond hope, and is so simple as to need but little explanation.

I have been sometimes asked to make public the system adopted for warming my house, but indolence and want of leisure have combined to prevent my doing so. Just now, being away from home and compelled to spend a couple of days in an ordinary country hotel, where the temperature of the rooms is of that mixed kind which results from the roasting action of an open fire on the one hand and a bitter draught of frosty air from open door or draughty window on the other, I am reminded of the unhappy thermal condition in which most of my fellow countrymen live, and feel moved, therefore, to ask you, sir, to allow me through you to make some suggestions calculated to improve it.

A large stove, constructed on a model I will immediately describe, was placed in the basement of my house, in a small brick chamber constructed for it. A supply of air from outside was brought to this chamber and allowed to circulate round the warm but not overheated stove, then conveyed through branch pipes to the entrance hall and the rooms on the ground floor. The fresh air, on its passage to the stove, was made to pass through a thin woollen cloth of considerable area, to be thus filtered and cleansed from the smuts and the fog with which it might at times be laden. As the stove was placed low, the warmed air rose naturally into the house, pushing itself up through the gratings provided, and so filling the house with warm filtered air, which, if in excess, might flow out at the cracks and crannies which before had been inlets for cold and possibly dusty air.

The plan answered well—the whole house was warm; the tempered air ascended by the staircase and found its way into every bedroom, passing up the chimneys and

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keeping all apartments aired. It was no longer necessary to put on a coat or shawl on entering these formerly arctic regions.

Now it should be understood that in all this there was no design against the open fires—it was intended only to aid and supplement them; but as the convalescent leaves behind him the crutches once so essential, so we cared less for our fires, and for weeks after our friends had established them for the winter; and for many a week of mild weather, while usually fires are kept on as a matter of course, we found them oppressive and did without them. There is great comfort in a house the general air of which is warm. One is spared the involuntary shudder and captious inquiry, "Oh! who has left the door open?" or, "Is there not a great draught from that window?" Nor need there be a question as to appropriating the one or two favoured positions in the room thought to be free from draught. All places in the room are alike, and continual attention to the fire is unnecessary.

The stove I employed was one contrived partly on the model common in the United States. The coke is fed in at the top, but the combustion is limited to a layer of about six inches at the bottom, the rest of the coke being merely in reserve. The rate of combustion is determined by the amount of air admitted, and not by the quantity of coke supplied. Yet the combustion that does take place is not necessarily slow, but fairly active. It is like that of a candle, which burns only at the end—whether it is one inch or ten inches in length the combustion is the same. Thus my stove contains as much coke as will last for more than twenty-four hours, and it requires attention only once a day for refilling and the removal of ashes.

By this system of house warming a considerable economy is effected. All, or very nearly all, the heat developed by the coke in the stove is thrown into the house and utilized, so that fuel to the value of about £3 will warm a large house during the whole winter, in place of five times that value of coals burnt in open fires which do not warm the house. It is said that the open fire assists well the free ventilation of the house. True, but it does this by drawing in cold air from all cracks and unexpected places, while the system here advocated sends in a liberal supply of fresh air drawn through a proper channel, and this air is filtered and warmed before it enters the rooms.

Three years ago I moved up to London, and have successfully introduced this system of warming my house here, taking also another step in advance, in that abestos gas fires take the place of all open coal fires. The old kitchen range, calculated to burn unlimited coal, whether the same was needed in cooking operations or not, has been replaced by a gas-cooking stove, where a clean and smokeless heat is ever available—one that can be regulated at will and dispensed with when no longer needed. In the old house we had the usual cooking range and a gas stove in addition; but to my grief I found continually that, although all cooking operations, even to boiling the kettle, were in preference conducted on the gas stove, yet the large coal fire was never allowed to relax. One excuse was that it was needed to keep the water hot in the boiler.

On starting the arrangement in London the problem of keeping a supply of hot water without a coal fire presented itself, but with the aid of some of the clever appliances now easily obtained this has been overcome. There is hot water over the scullery and pantry sinks, hot water on chief-bedroom floor, and hot water in bathroom, yet no hot water pipes. The mechanical difficulty thus overcome, a greater now presented itself. I was definitely told that we should never keep a cook if there was to be no kitchen fire. This metaphysical obstacle was a serious one, but, having gone so far, I determined to surmount it. The time was early summer. Here was my chance. I pointed out to our cook the advantage of a cool kitchen, and suggested that, having perfect cooking apparatus, the means of obtaining unlimited hot water, and a gas-heated chamber for airing linen, the usual large open fire might be dispensed with. Should it be necessary in winter, some arrangement would be made.

Things went on well. The summer heat was my great ally, and before the cold of winter was felt the coke-fired house stove was in action, and no demand for the kitchen fire was made. In the sitting-rooms are gas fires, which can be lighted when needed, but this occurs only in very cold weather—often they are lighted for the sake of appearance. Friends say that our gas fires warm the rooms better than is the case with them. They forget the milder air of our whole house. The stove in the basement does the work; the glowing abestos adds a little brightness, and supplies the demand of our fire-worshipping instincts.

The general result is that we burn nothing but coke and gas. We send out no smoke to contaminate the atmosphere, and we have much less dust in our rooms than is usual. The work of cleaning grates, lighting fires, and carrying coal is saved; the comfort of the house is much enhanced; we live in a warmer climate than formerly, and suffer much less from colds and passing ailments.

LIQUID stove blacking:—Pulverized black lead, one pound; turpentine, one gill; water, one gill; sugar, one ounce.

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Popular Science Papers

"Blessings on Science! When the Earth seemed old,
When Faith grew doting, and our reason cold,
'Twas she discovered that the world was young,
And taught a language to its lisping tongue."

—*Charles Mackay.*

THE PHYSIOLOGICAL ACTION OF ALCOHOL.

By EDWARD C. MANN, M.D. (F.S.Sc., LOND.)

Member New York County Medical Society, American Association for Cure of Inebriates, &c., &c., Brooklyn, New York. Physician to Sunnyside Home for Inebriates, the Morphine Habit and Diseases of the Nervous System, Brooklyn, N. Y.

THIRD PAPER.

THE PHYSIOLOGICAL EFFECTS OF ALCOHOL ON THE HIGHER FACULTIES OF THE MIND.

1. THERE is a capacity of the individual to recognize the evil effects of alcohol upon his associates, while not recognizing its effects upon himself, the latter being very obvious to those around him and the subject of remark. A very good illustration of this we saw the other evening in a gentleman, who, while decidedly under the influence of alcohol himself, was regretting the fact that a friend of his was indulging altogether too freely in alcohol, seemingly not having the faintest idea that he was occupying the same position himself.

2. *Alcohol obscures the higher faculties.* A man who is fond of music, art, or literature, leaves his place of business with the intention of going to a concert, an art gallery or a lecture. He takes two or three glasses of wine or spirits and loses the desire for any such kind of intellectual amusements and spends his evening either in a frivolous or a sensual manner, far different from his intentions of an hour previous. This is due to the fact that he has disturbed the higher functions of the mind, by getting up, by the alcohol, a vascular engorgement of his brain, which has impaired his capacity for the higher intellectual operations of the mind. 3. There is a self-consciousness of the individual at times, when free from alcohol, of the fact that at the times when he has been indulging in stimulants his judgment has not been so good, that his moral faculties have not had their usual control over him, and he is able to trace many lapses of which he is ashamed, to the indulgence in alcohol. 4. The man who has indulged in the alcohol habit sufficiently to appreciate its evil effects on himself and who has either abstained for awhile on account of the warnings of his own symptoms or by the advice of a physician whom he has consulted on account of disagreeable symptoms, is very likely in a moment of nervous depression, and such moments are sure to occur, to delude himself with the idea that he will take a single drink, to tone up his system and remove the present disagreeable sensation. While he expects to end with this simple quantity of stimulant, the inevitable result will be, that there will be a still greater craving for a repetition. Now why is this? It is because it is the peculiar property of alcohol to beget in the individual who uses it even in moderation, daily, a craving for it which becomes a disease, the disease of inebriety, the great diagnostic mark of which is the irresistible craving for alcohol coming on perhaps paroxysmally every week or month. What was at first a moderate, healthy desire, has become an augmented and insatiable demand and the individual is lost to the dictates of reason, affection, or conscience. The will power has become lost. In such cases proper treatment until the lost will power is restored, and total abstinence ever after, is the only course to pursue.

THE ACTION OF ALCOHOL IN PRODUCING DISEASES OF THE MIND.

Lord Shaftesbury, in his evidence before the select committee on lunatics, expressed his opinion that fifty per cent. of the cases admitted into English asylums are due to drink. This is a very large estimate, but many superintendents of foreign asylums have estimated the admissions from intemperance at twenty-five per cent. or higher. In the last report of the Department of the Seine in France the deductions are that 27·4 per cent. of all cases of mental diseases are due to alcoholic excess. In the report of the Scotch Commissioners for 1871, their deduction is that 19 per cent. of all cases of insanity are due to alcoholic excess. The late Dr. Kirkbride, of Philadelphia, a distinguished alienist, and Superintendent of the Philadelphia Hospital for the Insane, made deductions based on the admissions to his hospital for 31 years, showing that 22 per cent. of males and 2 per cent. of females had become insane through drink. While the consumption of alcohol in France doubled between 1849 and 1869, the cases of insanity from intemperance had risen 59 per cent. with men and 52 per cent. with women, with a total per cent. of 22·31 per cent. of all cases as due to alcohol in 1872. M. Lunier estimates that 50 per cent. of all idiots and imbeciles to be found in the larger cities of Europe have had parents who were notorious drunkards. It is a very conservative estimate to make, if we say, calculating percentages upon the total number of admissions, that 12 per cent. of the total number admitted of both sexes are due to alcoholic excess, and 20 per cent. of the total number of males admitted to all American asylums. Personally it is my belief that a very much larger percentage of cases of mental disease are due directly to alcohol. The English Commissioners of Lunacy in their schedule given in the report of 1877 estimate that 14·9 per cent. of all cases are due to alcoholic excess.

To recapitulate: the physiological effects of alcohol upon the human body are primarily:—

1. Congestion, from want of motor control.
2. Loss of muscular control.
3. Perversion of judgment and will power.
4. Absolute prostration of nerve power. These are its *primary* physiological effects.

We have shown that alcohol has no claim as a food; for while considerable alcohol is decomposed in some way in the organism, animal heat is not only not sustained, but, on the contrary, greatly lowered, and there is corresponding reduction in the amount of the natural products of oxidation, such as carbonic acid. The physiological effects of alcohol *secondarily*, are, as we have

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LONDON: A. P. WATT, 2, PATERNOSTER-SQUARE, E.C.

A REMARKABLE CASE.

UNDER the above heading the *Doncaster Reporter* of July 6th, 1887, published the following in its editorial columns :—

Our readers may recall the circumstance of a young clerk, named Arthur Richold, falling insensible on the Wheatley-road in this town some time ago, and being picked up, as he continued perfectly helpless, and taken in a cab by two gentlemen to the office of W. P. Fisher, Esq., the solicitor who employed him. On restoring him to consciousness it was ascertained that he was afflicted with what seemed to be an incurable disease. When he was able to speak he said he had been to his dinner and was on his way back to his work, when suddenly his head was in a whirl and he fell in the street like a man who is knocked down. On coming to his senses in the solicitor's office he thought what this might mean, and feared he was going to have a fit of illness, which we all know is a very dreadful thing for a poor man with a family to care for.

With this in his mind he at once sought the best medical advice, telling the doctors how he had been attacked. They questioned him, and found that his present malady was exhaustion of the nervous system, resulting from general debility, indigestion, and dyspepsia of a chronic nature. This in turn had been caused by confinement to his desk and grief at the loss of dear friends by death. The coming on of this strange disease, as described by Mr. Richold, must be of interest both to sick and well. He had noticed for several years previously, in fact, that his eyes and face began to have a yellow look; there was a sticky and unpleasant slime on the gums and teeth in the morning; the tongue coated; and the bowels so bound and costive that it induced that most painful and troublesome ailment—the piles. He says there was some pain in the sides and back, and a sense of fulness on the right side, as though the liver were enlarging, which proved to be the terrible fact. The secretions from the kidneys would be scanty and high-coloured, with a kind of gritty or sandy deposit after standing.

These things had troubled Mr. Richold a long time, and after his fall in the street he clearly perceived that the fit of giddiness was nothing more than a sign of the steady and deadly advance of the complaint, which began in indigestion and dyspepsia. His story of how he went from one physician to another in search of a cure, that his wife and little ones might not come to want, is very pathetic and touching. Finally, he became too ill to keep his situation, and had to give it up. This was a sad calamity. He was appalled to think how he should be able to live. But God raised up friends who helped to keep the wolf from the door. He then went to the seaside at Walton-on-the-Naze, but neither the change nor the physicians who treated him there did any good. All being without avail, he visited London, with a sort of vague hope that some advantage might happen to him in the metropolis. This was in October, 1885.

How wonderful, indeed, are the ways of Providence, which dashes down our highest hopes and then helps us when we least expect it.

While in London he stated his condition to a friend, who strongly advised him to try a medicine which he called *Mother Seigel's Curative Syrup*, saying it was genuine and honest, and often cured when everything else had failed. He bought a bottle of a chemist in Pimlico, and began using it according to the directions. He did this without faith or hope, and the public may, therefore, judge of his surprise and pleasure when, after taking a few doses, he felt great relief. He could eat better; his food distressed him less; the symptoms we have named abated; the dark spots which had floated before his eyes like smuts of soot gradually disappeared, and his strength increased. Before this time his knees would knock together whenever he tried to walk. So encouraged was he now that he kept on using *Mother Seigel's Curative Syrup* until it ended in completely curing him.

In speaking of his wonderful recovery, Mr. Richold says it made him think of poor Robinson Crusoe, and his deliverance from captivity on his island in the sea; and added, "But for Mother Seigel's Curative Syrup the grass would now be growing over my grave."

Our readers can rest assured of the strict truth of all the statements in this most remarkable case, as Mr. Richold (now residing at Swiss Cottage, Walton-on-the-Naze) belongs to one of the oldest and most respected families in the beautiful village of Long Melford, Suffolk, and his personal character is attested by so high an authority as the Rev. C. J. Martyn, rector of that parish, besides other excellent names. We have deemed the case of such importance to the public as to justify us in giving this short account of it in our columns.

shown, hypertrophy of the heart, structural diseases of the stomach, brain, liver, and kidneys, alcoholic dyspepsia, alcoholic phthisis, and a multitude of nervous lesions which may end in alcohol dementia, in which personal identity and responsibility are lost, and whose earliest symptoms are loss of memory, failure of speech, manifestations of moral obliquity, delirium tremens, mania a potu, a more prolonged mania than delirium tremens and, perhaps, chronic insanity.

Alcohol should be classed with powerful drugs, and when prescribed by physicians it should be done with conscientious caution and a sense of great responsibility. The use of alcohol as a beverage is productive not only of a large amount of physical and mental diseases, but worse than this it entails diseased appetites and enfeebled constitutions upon offspring. The progeny of alcoholics are peculiarly liable to degeneration of the nervous powers, and tendency to inebriety in the offspring of the inebriate is just as strong as the tendency to consumption in the offspring of the consumptive. If a person is suffering from nervous prostration which is so common to-day, and which is termed *neurasthenia*, Rest, Massage, and Electricity under a competent physician, together with appropriate nerve tonics, will build up the system far more surely than alcohol.

The use of alcohol as a beverage, of course, creates a new physiological want, a systematic demand, which becomes peremptory, irresistible and hereditary. The insane temperament may originate in this way. It has been claimed that moderate indulgence is not harmful, but the alcoholic appetite may result from it to become fixed and hereditary, and furthermore, Epilepsy, Hysteria, Idiocy, and many other maladies result from moderate drinking, not carried to the extent of drunkenness and become hereditary. A somewhat extended hospital and professional experience has convinced me of this fact. For example, in a family in Connecticut, where the father has never drank to immoderation but always moderately, the writer is to-day treating his two daughters, one for epilepsy, the other for nervous prostration of a grave type. The use of alcohol as a beverage is tampering with a formidable poison. To women, alcohol is peculiarly dangerous, as it injures not only their own physical and mental organization and development, but through them all the evils we have spoken of descend to posterity while they themselves are apparently guilty of no excess. Alcohol is a prompt and powerful stimulant, but the stimulation is temporary, passes off, and is followed by a corresponding languor and depression. Alcohol cannot increase a person's power to sustain fatigue and exposure; on the contrary, under circumstances of unusual exposure and fatigue alcohol does harm and not good, and it is not on record that it ever conferred on any living man or woman, permanently, an artificial working power above the normal standard of the individual. All Arctic explorers, Napoleon's army in Russia, and the St. Bernard Monks, agree, as the result of their experience, that it increases the danger of death by freezing. Alcohol, therefore, diminishes the power of resisting cold.

The great fact, which we aim to present and impress is, *the absence of any real benefits* from the use of alcohol as an ordinary drink, and the tremendous danger of the alcoholic appetite and its hereditary consequences. Of the extreme value of alcohol as a medicine we are well aware, but it should no more be tampered with by people as a beverage than should opium, chloral, or other drugs.

It has been estimated that the people of the United States spend in the period of eleven years, for spirituous liquors, more than the entire value of their agricultural, mechanical, and manufacturing products. Dr. Young, Chief of Bureau of Statistics at Washington, estimated that in 1867 the annual consumption to be about 221,200,000 gallons and the cost about $600,000,000. This includes malt liquors. We believe that any change in public sentiment that will confine the use of intoxicating liquors to the uses of science, art, and medicine, must originate with the reading and thinking public, and that, when they once thoroughly understand the physiological effects of alcohol upon the human body, from them will radiate a public sentiment upon the alcohol habit which will penetrate every strata of society and every portion of the civilized world.

THE FLEA.

Fleas love dirt, and in it they flourish and multiply most abundantly. But in spite of St. Dominic's curse and their unclean haunts, they are interesting little fellows. Let us put one under the microsope. It seems to be clothed in a sort of armour formed of brown overlapping plates, that are so exceedingly tough as to be almost indestructible. Its head is small and very thin, and it has a single eye upon each side. This eye is black, and the rays of light scintillate within it like sparks of fire. Puget managed to look through one of these eyes, and he found that it diminished objects in size, while it multiplied them in number—a man appearing like an army of fairies, and the flame of a candle becoming a thousand tiny stars. From the shape of its head, and for other reasons, the flea is supposed to use only one eye at a time. The offensive weapon of the flea is composed of two palpi, or feelers, two piercers, and a tongue. When it feeds it stands erect, thrusting this sucker into the flesh, and it will eat without intermission until disturbed, for it voids as fast as it swallows its food. It is interesting to put several in a glass, and, giving them a piece of raw meat, see them all standing on their hind legs to suck up its juices.

Their manner of breathing is still undetermined, but it is thought most probable that they receive air into their bodies through small holes at the ends of the palpi.

The legs of a flea are marvels of strength and elasticity. They are joined to the body by long tendons that act like wire springs. In making its leap, which, it is said, can cover two hundred times its own length, the flea draws the leg close up to the body, and then throws it out with great force: but the impulse proceeds from the first joint alone, the others only increasing it by their stretch while the leap is being made.

Fleas are possessed of great strength. Mouffet tells of a mechanic who made a gold chain, as long as his finger, that a flea dragged after him, and a golden chariot, which he drew also. Bingley writes of a watchmaker in the Strand who had an ivory four-wheeled chaise, with a coachman on its box, drawn by a flea. The same man afterward made a carriage with six horses, a coachman, four persons inside, two footmen behind, and a postilion on one of the horses, all of which were drawn by a single flea. Latrielle mentions a flea which dragged a silver cannon, of twenty-four times its own weight, mounted on wheels, and showed no fear when it was charged with gunpowder and fired off. Rene says that he saw three fleas drawing a tiny omnibus;

that a pair drew a chariot, and that a brass cannon was dragged by a single one.

There are several varieties of fleas, but they are so much alike that their differences are interesting only to scientific people. The cat flea will do as well as any to show us the process of breeding. During the spring and summer months she simply drops her eggs into the fur of the cat, but in the autumn and winter she glues each firmly upon a hair. These eggs are so small as to be barely visible to the naked eye, but under the microscope they are very beautiful, looking like the loveliest pearls, and are perfectly translucent. The flea deposits nearly two hundred at a time, running about and dropping them here and there. They soon hatch into small, white, footless worms. In from one to two weeks they go into cocoon. Nothing can be prettier than this cocoon. I wish I could show it to you, but will try to describe it. It is like a flask of clear glass, tinged at the edges with pearly tints, and dotted over with gold. The little sleeper within lies in a circle, is rose coloured, and looks like the delicate petal of a flower. In about six weeks he reaches maturity. At first he is not larger than a mite, but when well-fed grows quickly in size and strength.

Fleas are quarrelsome and great fighters. When several are confined in a glass, they will stand on their hind legs, striking at their opponents with the others, and roll over and over each other, losing legs and antennæ, and at last giving up their lives in the fight. There is a record of a flea which lived ten days after such an encounter, with no antennæ, three plates of his side broken in, one eye gone, and with only four legs, and these cut off to the first joints.

Fleas are supposed to feel a great antipathy to worm wood and other bitter herbs; and, in England, the country people have a habit of placing these about their cottages for the purpose of banishing the lively little pests.

Dangers of Electric Light Wires.—At Lincoln, Neb., on September 21st, a working-man named Smith was horribly mutilated in a remarkable manner. On O-street, at the corner of Ninth, hanging from a telegraph pole and lying along the ground for a distance was a broken telephone wire, which had in some manner become crossed, or in connection with one of the electric light wires. As Smith was passing along the street he saw the wire burning, and, attracted by the strange appearance, and not realizing what it was, evidently took hold of it to ascertain what it meant. The shock he received was terrific, and his shrieks brought hundreds to the street. He could not loosen his hold on the wire, and it burned his hands to the bone. In his writhings and contortions the charged wire came in contact with his head, burning out one of his eyes and laying the side of his face open. Wherever it struck his body it cut like a knife. A bystander, realizing the peril of the man, ran to him, grabbing him to pull him from the wire, but by the shock he received when he came in contact with the body of the man he was knocked ten feet into the street and utterly prostrated, so that it was feared he was also killed. By this time the electricity had either burned the man Smith loose from the wire or he had succeeded in his struggles in breaking away. He was picked up and carried into an adjoining restaurant, and a half dozen physicians summoned. The man presented a horrible appearance, and despite the physicians' efforts to put him under the influence of morphine he shrieked and writhed in the agony he suffered until taken to the hospital.

Jottings from the Journals

"Th' ingredients of health and long life are
Great temperance, open air,
Easy labour, little care."—*Sir Philip Sydney.*

The Strength of Tea.—Considering its universal use as a beverage, it is surprising how little is known about it, or any standard tests of its quality. The quality of tea generally spoken of under the term "strength" is very vaguely defined, and as yet no relation has been ascertained between it and the amount of any particular constituent of tea. Considering the physiological properties of theine, the characteristic and essential alkaloid of tea, it might be supposed that the "strength" of tea depended to a considerable extent upon the amount of this substance present in it, and this view assumes some probability in consequence of the variable statements that have been made as to the quantity of theine obtained from various kinds of tea, which estimates range from 1 to 2 to nearly 6 per cent. A recent investigation undertaken by Paul and Cownley, the results of which have been published in the *Pharmaceutical Journal*, has shown, however, that the variable yields previously obtained were probably due to imperfect methods of analysis, and that theine is a much more constant constituent of different kinds of tea than had been supposed. It was, in fact, found that in upwards of twenty samples of Indian and Ceylon teas, commercially valued by the brokers at prices ranging from 7d. to 3s. per pound, the proportion of theine varied only from 3·22 per cent. in the lowest to 4·66 per cent. in the highest. In the case of two samples of tea selected by experienced judges as representing extreme differences in "strength," the proportion of theine was practically the same in both. It is evident, therefore, that neither the market value nor "strength" of a tea is dependent upon the quantity of theine it contains. Paul and Cownley consider that it is much more probable that the "strength" is chiefly determined by the amount and condition of the astringent constituent comparable to a tannin, but before pronouncing definitely upon this point it will be necessary to acquire a better knowledge of the chemical nature of that constituent. The results of this investigation are of additional interest to the medical practitioner, because they furnish him with data concerning the approximate quantity of theine introduced into the system by habitual tea-drinkers. An ordinary modern teaspoon would contain about sixty grains of tea, and, according to the housewife's well-known rule, would be the quantity allotted to each person sharing in the tea-brewing. If the tea contained the average quantity of theine—say 4 per cent.—it would represent 2½ grains of theine. According to experiments made by Paul and Cownley, infusion in boiling water during five minutes, which does not exceed the time tea is usually allowed to "stand," is sufficient to remove at least half of the theine from the leaves, so that in a case such as that supposed each tea-drinker would ingest at least a grain of theine or equal to a medicinal dose, as indicated by the *Pharmacopœia*.—*Lancet*.

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Exercise in the Treatment of Heart Disease.—For generations the main idea in the treatment of organic heart disease has been physical rest to diminish the labour of the damaged organ. We have been in the habit of prohibiting all forms of active labour to the sufferers from cardiac disease, and the principle of our treatment has been the unexpressed but ever present

"ELECTRICITY IS LIFE."
(TRADE MARK.)

PULVERMACHER'S

WORLD-FAMED

GALVANIC BELTS,

FOR the CURE of NERVOUS DISEASES.

HAVE RECEIVED TESTIMONIALS from

THREE PHYSICIANS to

HER MAJESTY the QUEEN,

THE ACADÉMIE DE MÉDECINE of Paris and

FORTY MEMBERS of the

ROYAL COLLEGE of PHYSICIANS of LONDON.

RECENT TESTIMONIALS.

GALVANISM *v.* NEURALGIA.

Whitacre Station, near Birmingham, Jan. 9, 1888.

Dear Sir,—I am pleased to inform you that after wearing your Galvanic appliance for about two weeks the neuralgia quite left me, and I have not felt any pain since.

I feel better and stronger in every way.—Yours faithfully,

J. L. Pulvermacher, Esq., 194, Regent-street, W. T. METCALFE.

GALVANISM *v.* VARICOCELE.

Montgomery-street, Sparkbrook, Birmingham, January 7th, 1888.

Gentlemen,—I have much pleasure in informing you that the Galvanic Belt which I purchased from you in October last has quite removed all symptoms of varicocele.

I have not had the slightest pain since wearing your Galvanic appliance.

Yours truly, J. PASS.

Messrs. J. L. Pulvermacher & Co., 194, Regent-street, W.

GALVANISM *v.* ASTHMA.

Eastbourne, 6th Jan., 1888.

Dear Sir,—I am pleased to say that I have greatly benefited by the use of your special appliance for asthma; in fact, after the first three weeks my asthma entirely left me.—Yours truly, B. SHEPHERD.

Mr. Pulvermacher, 194, Regent-street, W.

GALVANISM *v.* NERVOUS EXHAUSTION.

Bradford, January 4th, 1888.

Dear Sir,—I am pleased to inform you that since wearing your appliance I have gained much in physical strength, general health, and mental power, with increased buoyancy of mind.

I consider that your treatment has enabled me to resume my work, that of teaching, and to find a pleasure in life and in my daily duties.

With many thanks for the benefit I have received, yours very truly,

Mr. J. L. Pulvermacher, 194, Regent-street, W. (Miss) H. HURRY.

GALVANISM *v.* SCIATICA.

8, Church-row, Sudbrook, near Chepstow, 31st December, 1887.

My Dear Sir,—I ought to have written to you long ago to tell you what great benefit I have derived from your treatment.

I am now quite cured of Sciatica, and I never really had a bad attack since I first applied your Galvanic Belt.

I feel almost ashamed of myself for not writing to you before, and you are quite welcome to make use of this letter.—Yours faithfully,

Mr. J. L. Pulvermacher, 194, Regent-street, W. W. TAYLOR.

GALVANISM *v.* CONSTIPATION and NERVOUS EXHAUSTION.

111, Upper Moss-lane, Manchester, 9th December, 1887.

Dear Sir,—I feel it my duty to acknowledge the great and unexpected benefit I have derived from your treatment. My case was one of chronic constipation and nervous exhaustion of over forty years' standing, and after trying various remedies without any effect whatever, I was persuaded to purchase your Combined Belt, which has resulted in not only strengthening my body and limbs, but, to my great surprise, has cured my constipation, and I now have as natural and healthy action of the bowels as I could possibly desire. You may make what use you like of my name and address. —Yours gratefully, THOMAS CAHY.

Mr. J. L. Pulvermacher, 194, Regent-street, W.

GALVANISM *v.* ASTHMA.

142, Hill-street, Glasgow, 6th December, 1887.

Dear Sir,—I have certainly derived much benefit from your treatment, and I have not had a regular attack of asthma since I first commenced your Band three months ago.—Yours truly, J. NAIRNE.

Mr. Pulvermacher, 194, Regent-street, W.

GALVANISM *v.* NERVOUS EXHAUSTION.

The distressing symptoms of Nervous Exhaustion and Debility are speedily removed by means of PULVERMACHER'S world-famed GALVANIC BELTS, which are so arranged as to convey a powerful electric current direct to the affected parts, gradually stimulating and strengthening all the nerves and muscles, and speedily arresting all symptoms of waste and decay.

ADVICE PERSONALLY or by LETTER, free of charge.

FOR FURTHER TESTIMONIALS, both Medical and Private, see new Pamphlet, "GALVANISM: NATURE'S CHIEF RESTORER OF IMPAIRED VITAL ENERGY," post free on application to

J. L. PULVERMACHER AND CO.,
GALVANIC ESTABLISHMENT,
194, REGENT-STREET, LONDON, W. (nearly opposite Conduit-street).

idea, accepted as a self-evident axiom, that perfect rest was the best means of securing muscular compensation. Professor Oertel's experiments and results have come with startling surprise upon those who forgot to distinguish between a useful principle and the exceptions which the multiformity of disease renders it imperative to recognize. As is well known, he treats a considerable proportion of cases of organic heart disease by regulated exercise, especially graduated ascents of mountains, and his results place the value of his method beyond reasonable dispute. There is nothing really surprising either in his treatment or the success which has attended it. A little reflection will suffice to convince us that, while rest is often useful, and, indeed, quite indispensable, in heart disease, there are yet many cases in which well-regulated exercise will improve the nutrition of the cardiac muscle, as of the rest of the muscular system, and hence tend to the promotion of circulatory vigour.—*Medical Record.*

TO CLEAN PAINT QUICKLY.—To an ounce of borax add a pound of best brown soap in small pieces, mix, and put on the fire with three quarts of water; heat it until the soap is dissolved, stirring all the time. Do not allow it to boil. Use with flannel, and rinse off as soon as the paint is clean. This mixture is also recommended for washing clothes.

VALUE OF A HOBBY.—If we ever became vindictive toward a fellow-man, and desired to punish him, we would deprive him of his hobby; without that, he would be lonesome in a crowd, and crowded in a wilderness, and would seek what he had lost and find it not. The business man with a hobby that he rides is a happy man; but if the hobby rides him, the business will suffer sooner or later. The man without a hobby will be found in the club-room, the billiard-room, or card-room. The hobbyist, with his loft of pigeons, his bird-skins or eggs, bugs or beetles, takes more substantial happiness than all the members of the highest toned club in a city combined. Besides that, home and Dame Nature is all the world to him and all the heaven he ever aspires to.

Our Letter-Box

"Conference [maketh] a ready man."—*Bacon.*

NOTICES TO CORRESPONDENTS.

All Communications for the Editorial Department (including Books for Review, Specimens of Sanitary Appliances, &c.), to be addressed to "THE EDITOR OF HEALTH," 2, PATERNOSTER-SQUARE, LONDON, E.C. *Those intended for the Publishing Office to be sent to* MR. A. P. WATT, THE PUBLISHER, *at the same address.*

RULES FOR CORRESPONDENTS.

OWING to the mass of letters which reaches us each week, we respectfully direct the attention of Correspondents, desiring replies in the LETTER-BOX DEPARTMENT of HEALTH, to the following rules:—

1. All questions are answered free of charge in the columns of HEALTH.
2. All letters must be legibly addressed to "The Editor of HEALTH, 2, Paternoster-square, London, E.C.," *and to no other address.*
3. Questions to which answers are desired by post, are so replied to solely at the Editor's discretion. If no answer is sent by post, the query will be replied to in the "Letter-Box" columns of HEALTH. A stamped addressed envelope must accompany all queries to which a private reply is desired.

4. Addresses of physicians and surgeons will, as heretofore, be forwarded FREE to Correspondents on their enclosing a stamped addressed envelope for reply.
5. Correspondents are requested to write on one side of the paper only, and to make their inquiries as brief as may be consistent with clearness.
6. From the necessity of sending HEALTH to press early in the week, no Correspondent can be replied to in the "Letter-Box" columns in the same week in which the inquiry is received. Replies crushed out of any issue will be found in the succeeding number.
7. No Post Cards must be used in sending queries. Violation of this rule deprives the sender of the privilege of a reply.

LETTERS TO THE EDITOR.

MALE AND FEMALE FASHIONS INJURIOUS TO HEALTH.

SIR,—I will, with your permission, say a word or two by way of commenting on your article on "Fashion and Health."

That custom to which you more particularly refer is the "abuse of the corset," which you say is very prevalent to-day; and is "gaining ground and extending into the lower ranks of society."

Looking at the matter from a philosophical point of view, I confess that I am not so much alarmed as most of those writers who claim to be hygienists, and whose special *bête noire* is the corset, in any form whatever. The most superficial observer must have been struck with the fact that this revival of tight-lacing has taken place *immediately after* a special crusade had been made against stays in general by Mr. Frederick Treves and some other "academical" expositors of the subject. What is more, it appears from the pages of a contemporary that the human waist has been reduced to twelve inches without apparent injury to health; and that many men have worn corsets from eighteen to twenty-three inches in girth, and yet professed to suffer no injury to their health. Some cases have been published also on the other side, showing mischief from a much smaller degree of compression, especially when it has been *suddenly* effected, thereby oppressing and obstructing the great vessels of the body. But in no case have injuries to the organs themselves been referred to in the whole of this controversy, with the exception (if it must be considered such) of that of a foolish girl, who, by the help of *several* of her schoolfellows, succeeded in breaking two of her ribs and thus reducing her waist to eleven inches.

The odd part of the matter is that she still follows the practice; though unable to bear as much as before. What is really wanted is a statistical basis for the teachings of the anatomical school. If they are correct, it ought to be easy to show that in the case of ladies from sixteen to sixty (who alone can be supposed as a class to use tight corsets), the death rate, at present the lowest in the community, has shown some increase, in deaths *from any cause whatsoever*, since the cultivation of small waists has come into fashion. Upon this point I pause for a reply: and meantime I would point out a stereotyped male fashion which I believe to be the cause of at least two deaths for every one that can be proved to result from the most aggravated "abuse of the corset." I allude to the tight shirt collars and starched open shirt-fronts without which no gentleman can hope to be "received in society." When we think of the number of cases of apoplexy from buttoning, lacing, or pulling on of boots, and see the manner in which the "sloped" fashionable collar compresses the jugular vein and carotid arteries, we may well be astonished that no one *dares* to revolt against such a death-dealing vanity. They all, with one consent, begin to make excuses, and say (just as tight lacers do) that they "find their dress in no way inconvenient."

Think further of the horrors of a clean shirt on a cold evening in February, on a rheumatic back, when the shivering old bachelor puts on an unaired garment, stiffened with starch and borax, and finds at the last minute that he has to go through the same deadly process a second time, after the loss of a single button from the back of his neck. That the gymnastic process of forcing a button through pasteboard should detach it is natural, and that pneumonia, bronchitis and pleurisy should follow repeated chills is to be expected. But pride feels no pain, and we continue to be jeered out of our common sense, whilst criticism is considered as only lawful on articles of female apparel.—I am, Sir, Your obedient servant,

EDWD. HAUGHTON, M.D.

Spring Grove, Upper Norwood, S.E.

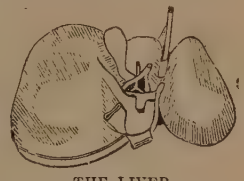
[We commend to Dr. Haughton the article on "Corsets and Ill-health," published in HEALTH for January 6th, 1888, for a full exposition of the scientific phases of corset-wearing, such as he demands.—ED. H.]

WONDERFUL VITALITY.

A WAR CORRESPONDENT LIVES FOUR DAYS WITH A BULLET IN HIS LIVER.

SOME fifteen years ago, Mr. Albert D. Richardson, the famous war correspondent of the New York *Tribune*, sat quietly in his office, engaged in newspaper work, when the door immediately opposite was suddenly opened, and a bullet from Dan McFarland's pistol pierced his body. Mr. Richardson was carried to a hotel near by, the surgeons probed in vain for the bullet, and in four days he died. The *post-mortem* examination disclosed the fact that the assassin's shot had penetrated the liver, and the most singular circumstance of the whole affair was that the victim was able to live four days with a perforated liver.

We know that a man may be shot, as was that "moonshiner" in North Carolina a few months ago, when eleven bullets perforated his body, and still recover; or he may have a crowbar driven through his skull, going in under the chin and coming out at the top of his cranium, as did that miner in Massachusetts, and live many years after the injury. But the moment that the liver is struck, whether with a violent blow sufficient to rupture it, or with a shot that penetrates it, the case is at once a grave one, and usually ends in death; no other proof is needed of the delicacy of its structure nor its extreme susceptibility to injuries. The liver is composed of five lobes, which lie directly under the right lung, and is of a spongy character. When the venous blood is circulating from the various parts of the body to the lungs, it passes through this organ, is there relieved of rank poisons, part of which undergo transformation, and are used for digestion, and a large portion as a cathartic. As a laboratory it involves more delicate processes than ever Faraday dreamt of, and when it is at all out of order it refuses to throw off these poisons, and they remain in it, instead of being used as Nature designed. With every coursing of the blood through its lobes, depositing the poisons spoken of, it soon becomes engorged, and the nature of the disease becomes chronic. Now, the reason why so little success has hitherto been reached in the treatment of liver complaint is because the philosophy of treatment has been lame, and the remedies totally inadequate. The old treatment was of the "hammer and tongs" style, goading the liver into activity, only to leave it in a semi-paralysed condition. It is a conceded fact that until within the past few years there has been no known remedy for chronic kidney disorders, and the intimate union which exists between the kidneys and the liver renders it absolutely certain that the latter cannot be restored to its right action when the former are impaired. The reverse of this proposition is also true; hence it follows that liver diseases are so difficult of cure, chiefly because the doctors know of no agency which will at once and the same time act upon both these deputating and blood-purifying organs without conflicting with either. The doctors admit that they have nothing to offer, but intelligent scientists have honoured their learning and patience by discovering a remedy whose success in the past few years in the treatment of kidney difficulties has been phenomenal. It has demonstrated quite as well its specific action on the liver. Warner's SAFE Cure was a discovery which proved its worth in thousands of cases regarded as helpless. It has been a wonderful benefactor, and one of the greatest gifts that medicine has had in the nineteenth century. The symptoms of kidney and liver difficulties are great and unnatural weakness, sickness, headache, constipation, piles, sallow complexion, boils, and so forth. Who of us have not suffered from some of these? and how many there are whose life is a constant protest against the inadequacy of medical men in the treatment of these diseases! Warner's SAFE Cure, once used, proves its worth; chemists all over the world sell it; it is within the reach of all; and once taken according to directions, with attention to diet and hygiene, it is a specific rapid and direct for the removal of liver complaints. It causes that brilliancy of complexion which is so much desired by our women—that sparkling eye, that ruddy skin, that springiness and elasticity of the muscles which are the best indications of the purity of the rivers of our body.—*East London Observer*, Sept. 24.



THE LIVER.

QUERIES AND ANSWERS.

REPLIES: GENERAL, SANITARY, AND MEDICAL.

[Readers of HEALTH will kindly note that when back numbers of the journal are desired, the letters containing such requests and stamps for the numbers should be addressed to the PUBLISHER of HEALTH, 2, Paternoster-square, London, E.C., and *not to the Editor*.]

ALPHA.—Try taking two tabloids of Antipyrin (Burroughs, Wellcome & Co.'s) every two hours when your headache is present, until six tabloids have been taken. This dose may be repeated once daily but not oftener. Take plenty open-air exercise and avoid worry.

TYNE.—Avoid reading and writing, at night especially, and wear tinted (plain) glasses for a time. After meals take fifteen drops Fer Bravais thrice daily in water.

NERVOUS DYSPEPTIC.—1. Any excess of fruit is apt to cause acidity, and you should therefore be careful in this respect. 2. Dates had better be avoided. 3. The bread should not be kept so long as five days. Your digestion being imperfect causes your symptoms. 4. Fresh air exercise we should regard as preferable in your case to gymnastics. Try milk as a staple article of diet, peptonized with Fairchild's Powders.

SCOTUS.—Try the effect of taking twenty grains bromide of potash in a wineglass of water, twice daily, between meals, when your symptoms trouble you. If this treatment does not suffice to cure you, consult an ear-surgeon, and be certain that there is no accumulation of wax in the ear. This is a frequent cause of such symptoms.

PARRY.—Inhale, at bedtime, the vapour of a pint of hot water, to which a teaspoonful of Friar's Balsam has been added. After your meals, take a dessertspoonful of Scott's Cod Oil Emulsion with Hypophosphites, thrice daily, as a general strengthening measure.

MARGARET P. — Superfluous hairs can only be satisfactorily removed by electrical means. Read the article on this subject in HEALTH, No. 149. We can send, if desired, on receipt of stamped addressed envelope, address of a specialist who removes hairs in this way.

FORTUI.—Try applying a little aromatic vinegar cautiously each day to the wart, and note if it disappears. Look to your boots and stockings, avoid all pressure, and wash your feet daily with Iodoform Soap and tepid water, dusting a little Fuller's Earth into your stockings.

MARCUS. — Read the pamphlet, "A Lecture to Young Men" (post free for 1s. 1d., from Mr. Renshaw, 356, Strand, London, W.C.), and study what is therein said about cases like yours, and diet and tonic remedies. You will get well by attention to the directions contained in the pamphlet.

B. R.—Take the following mixture for a week or so at a time, and then allow an interval of a week before resuming. This treatment to be carried out for some months.—Iodide of potass, two drachms; infusion of calumba, six ounces. A dessertspoonful to be taken thrice daily. The mouth may be gargled with chlorate of potash when symptoms appear there.

F. A. M.—Look to your digestion; rest after your meals, and avoid all indigestible foods; there are no other means of obviating the annoyance you refer to. Try taking a dessertspoonful of Scott's Pure Cod Oil Emulsion after your meals, as a stimulant and tonic measure.

STRONG EVIDENCE.

From the "Blackburn Times."

William Henry Holden, residing at 26, Whalley Old-road, Blackburn, has, ever since 1872, at frequent intervals, been subject to indescribable suffering, owing to terrible attacks of intense pain and swelling in his feet. His agony at such times almost drove him frantic. As is natural to suppose, everything that was recommended for the ailment, which was of an acute rheumatic nature, was used, but either owing to the stubbornness of the complaint or other causes, all the remedies applied proved futile. A few weeks ago, Mr. Holden, hearing how the life of Mr. William Buchanan, one of the Cunard Steamship Company's engineers, had been saved by St. Jacobs Oil, after he had been given up by the Liverpool doctors to die, and had been at times deprived of his reason by suffering, resolved to induce his son to try this Oil, and procured a bottle from Jackson & Co.'s drug store. To his utter amazement, and that of all the members of his family, the excruciating pain and terrible swelling left after only a few applications of the remedy had been made, and the young man is now free from his sufferings. "The change brought about by this bottle of St. Jacobs Oil is simply wonderful," remarked Mr. Holden, "and I gladly state that it has done more for my son in a single minute than all the remedies we had used before that time had accomplished in fourteen years. This may seem like a broad statement, but it is the plain, simple truth, and I gladly give my consent to the publication of our experience with this wonderful remedy." It may here be stated that leading newspapers of Manchester and Liverpool have recently reported similar remarkable cures. Among these is that of Mr. John Tetlow, a well-known resident of Oldham, who had long been so seriously afflicted with rheumatism that he was unable to walk. He was bent with agony. A single bottle of St. Jacobs Oil effected such a marvellous change that he is not only free from pain, but, although sixty years of age, he can walk as well as ever. So delighted was he with his relief that he personally sent a testimonial to the Great Britain Branch of the proprietors, The Charles A. Vogeler Co., 45, Farringdon-road, London, with full permission to have such use made thereof as they wished. The case of Mrs. Ann Watson, of Upper Pitt-street, Liverpool, is another instance of the incalculable value of this marvel of healing. The lady writes that she had been entirely deprived of the use of her feet owing to rheumatic troubles of long standing. Physicians could do nothing for her, and all medicines which she used were without avail. St. Jacobs Oil was finally used with the same astonishing results as in the instances above reported. She can walk as well as ever, and is in perfect health. Facts like the foregoing speak for themselves. And it must be admitted by all that so valuable a discovery as that herein referred to deserves to be made known everywhere.—[2308.]

WM. B.—Sit and sleep with your feet elevated, and get yourself fitted with a proper elastic stocking. You must also avoid constipation by the use of a vegetable dietary and the other means recommended to "Charlotte French" in the present number.

C. L.—You should wear an elastic stocking, or an elastic bandage, to be had from Messrs Lindsey & Co., Ludgate-hill, London, E.C. Sleep with your feet elevated, or elevate the foot of your bed. Avoid constipation especially, and when at rest have your feet elevated slightly.

M. M. O.—Fairchild's Pancreatic Extract (Messrs. Burroughs, Wellcome & Co., Snowhill, London) should be tried. Take milk which has been peptonized in this way, stale bread, white boiled fish, meat soups made with Brand's Beef Preparations, and see that you rest after your meals.

OLLO.—Use the following lotion, to be applied with a piece of lint, and allowed to dry on the parts: Powdered calamine (Ver), two drachms; powdered zinc oxide, one drachm; glycerine, one drachm; camphor water, to make up six ounces. Label, "For external use only."

MORA.—Consult Mr. Pulvermacher as to an appliance for your ailment.

LORNE.—Tidman's Sea Salt heated and applied dry in a flannel bag to the parts may relieve you when the pain is severe: and you might give Allan & Hanbury's "Tonga" a trial, as an excellent internal remedy.

A. W.—The person you consult is a quack. Read the pamphlet advertised in our pages, "A Lecture to Young Men" (free by post for 1s. 1d., from Renshaw, 356, Strand, London, W.C.), and attend to the directions there given regarding your health.

PARTICK.—The following recipe should be tried: Quinine sulphate, twenty grains; glycerine, one fl. oz.; cologne, two fl. oz.; bay rum, two fl. oz.; rose water, eleven fl. oz. Rub the quinine with the glycerine, and add the other ingredients in order named. The addition of fluid extract of jaborandi is recommended to stimulate the growth. Keep the hair short, and wash it once a week with Iodoform Soap and tepid water.

SORE.—Try the following: Carbonate of bismuth, ten grains; wood charcoal, ten grains; bicarbonate of soda, five grains. Mix. One such powder to be taken thrice daily, half an hour before meals, when you are troubled with acidity.

CHARLES HOLLY.—Try the effect, firstly, of having your sight tested (write for Mr. Browning's method, 63, Strand, London, W.C.), and of wearing suitable glasses. Your symptoms indicate the need for glasses. Your sedentary occupation is against you. Take more open-air exercise, and try also fifteen drops Fer Bravais after meals, in water, thrice daily.

PETER HARE. — Give twenty drops of Cascara Cordial in water, once daily, an hour before food, and see that whole-meal bread and stewed fruits are eaten regularly to complete the cure. Try hot salt water baths (made by adding Tidman's Sea Salt to hot water) at night, and apply the salt, heated in a flannel bag, to the painful parts.

NOMEN.—Try painting the throat with tannin and glycerine, which any druggist will give you; and internally take a dessertspoonful of Scott's Pure Cod-liver Oil Emulsion (advertised in our pages), twice daily, after food.

ABEL KING.—Wash the hair twice or thrice weekly for a time with a pint of hot water (soft) in which a piece of lump ammonia the size of a Brazil nut and a slightly larger piece of borax has been dissolved. Allow the fluid to cool, and use as a wash.

CHARLOTTE FRENCH. — Take twenty drops Cascara Cordial twice daily occasionally as a corrective to your digestive troubles. Avoid late suppers; give up all stimulants; and try Grant's Oat Flour for breakfast and supper. Tea and coffee are to be avoided, for a time at least.

FEODOR BAX.—Try the plan of syringing the nostrils twice or thrice daily, with tepid water, to which three parts Hazeline have

been added. Internally, take fifteen drops Fer Bravais thrice daily, after food; for the child use the same remedies, giving her a teaspoonful of Thomson's Cod Liver Oil Cream, thrice daily, after her food. Try a change of air to a bracing seaside resort. Let us hear result of this treatment.

ROBERT L.—Use Dr. Pierre's Eau Dentifrice after food, regularly, as a mouth-wash, and brush the teeth night and morning with his Tooth Paste (see advertisement in our columns).

MARTIN G. B.—Your ailment arises from indigestion. Rest after your meals, and take five drops Pure Terebene on a piece of sugar after your meals, or when flatulence troubles you. Food to be light, and to consist of a little meat, white boiled fish, stale bread, corn-flour (Polson's), milk puddings, and like articles. Possibly the taking of "Bokö1" with your meals might improve you greatly.

BESSIE F.—Give Dahl's Cakes a fair trial as a remedy for constipation. They form a safe and excellent corrective in this ailment. See advertisement in our pages.

SYLVANUS.—Try applying hot (dry) salt in a flannel bag to the affected parts. Let the food be of nourishing kind and give fifteen drops Fer Bravais in water, thrice daily, after food. If not cured, write again.

MORO.—Your question is one which can only be satisfactorily answered after examination of your chest by a physician. Send us stamped addressed envelope, and we will forward you address of a competent physician. In such a case as yours we advise you not to delay having such an opinion, which will likely relieve your mind, and result in your regaining health.

F. JAMES.—Try the effect of taking the Fer Bravais as ordered to "Sylvanus" above, in the first instance, as a suitable tonic, and such as you evidently require. Rest after your meals regularly, and take Bokö1 to dinner as a nutritive beverage. What is your occupation? If indoors, you must take fresh air and exercise regularly as a condition of health. The symptoms you name need not trouble your mind, but write again, if not bettered.

G. B. W.—Try the effect of taking a little Æsculap Water first thing in the morning, or alternate mornings, for a time, and between meals take fifteen drops of the tincture of the perchloride of iron in half a tumbler of water. If not bettered by these suggestions, write again.

HUTCHESON. — Try a Pulvermacher's Galvanic Belt, an appliance which, in addition to being of genuine character, has a high reputation in the cure of cases like yours. The instructions as to diet, &c., given in the pamphlet, "A Lecture to Young Men" (post free for 1s. 1d. from Mr. Renshaw, 356, Strand, London, W.C.), should also be followed out by you.

F. L. C.—Masticate your food thoroughly, eat slowly, and rest after your meals regularly. For flatulence, try five drops of Pure Terebene after your food, thrice daily, on a piece of sugar. Avoid excess of vegetable foods.

JOHN F. FORTESCUE.—1. We prefer the Marlborough Club Tricycle (front or bycicle-steering), made by the Coventry Machinists' Company, Holborn-viaduct, London, E.C. 2. Impossible to answer such a question without knowing the capabilities of the rider; but 100 miles a day is an easy distance for a comparative novice even in good health. Speed varies according to the roads and country. 3. Yes. 4. Not more but less dangerous than most other sports. 5. The best book on cycling is the volume published by Messrs. Longmans & Co. You will find every detail fully given and illustrated therein.

W. C. MOIR.—The appliances you mention are "magnetic" only in name, and even if they were "magnetic" they could not cure or affect your rheumatism. You should try hot dry salt applied in flannel to the part when the pain is severe, and the joint should be well rubbed night and morning with St. Jacob's Oil or Bow's Liniment. Drink Vichy Water, avoid much flesh food, and take plenty of vegetable food. Write again if not cured.

SEMPERVIRENS. — Give up tobacco entirely, and avoid beer. Replace the latter by Bokö1 as a nutritious beverage. Read the pamphlet recommended to "A. W." in the present number, and note what is therein said regarding the use of tonics. If that you name disagreed with you, we advise you to try the coca and damiana mixture named in the pamphlet, or to try the Vin Mariani of Messrs. Roberts & Co., chemists, New Bond-street, London, W. A cold or tepid sponge bath each morning with brisk friction thereafter, and plenty of outdoor exercise should benefit you. We shall be glad to advise again if you are not bettered by these hints.

OMEGA.—1. The results you name might accrue from these ailments. 2. Beef-fat, certainly. 3. Yes; cod oil is preferable. 4. Iron is incompatible with many other drugs; but of course we cannot fully answer you unless you specify which drug you mean.

ONE IN A FIX.—Are you sure your vests are of pure undyed wool? Such eruptions as you name are not uncommon as the result of wearing impure wools. Try those of Messrs. Ward & Co., of Bradford, and apply the ointment recommended to "Lorna" in HEALTH, No. 247.

TENER.—You are evidently losing your tone, and require nourishing food and tonics. Take fifteen drops Fer Bravais before your meals in water, and after meals take a dessertspoonful of Scott's Pure Cod Oil Emulsion with Hypophosphites. For the hair trouble, see advice given to "Job Ford" in HEALTH, No. 247. Use a soft brush only, and wash the hair once weekly with Bayley's Spermaceti Soap and tepid water.

T. G. BURNS.—The Coca Tobacco might be tried. If it fails, try Marshall's Cubeb Cigarettes (to be had of all druggists) for your chest ailment.

G. A. L.—Avoid constipation, and take a dose of Lamplough's Pyretic Saline in the morning of every second day. Exercise great cleanliness and wash the parts night and morning. If any injection is needed, use one, twice daily, made by adding a teaspoonful of Condy's Fluid to a tumbler of tepid water.

SIX FEET.—Follow the advice given to "Tener" in the present number as regards the Fer Bravais and Cod Oil Emulsion. You require such tonics, and it is probable that a rest at the Coast for a week or two would do you more good than drugs. If your symptoms continue, you must consult a physician, and have your chest examined.

INSOMNIA Z.—You may be right in thinking mental worry is at the root of your troubles. In any case, try the effect of taking for a few nights, at bedtime, thirty grains bromide of potash dissolved in a wineglass of water, and let us hear the result of this treatment. You certainly require some such mild sedative to correct your present "wearing-out" condition.

H. D. E. G.—We do not think you are at all correct in your surmise regarding the nature of your ailment. Try the tonics (Fer Bravais and the Cod Oil Emulsion) as recommended to "Tener" in the present number. These may have the effect of dissipating your complaint. If not cured, write again.

W. T. KENNEY.—We are not aware that any physician in this country has had experience in the form of treatment you name. The only plan would be for you to place yourself in communication with the physician mentioned in the extract you send us. Consumption, we may add, is one of those ailments for which new and startling "cures" are periodically promulgated. A recent one, duly noted in HEALTH (that of Dr. Bergeon's), has, for instance, been apparently discredited, after much research and many fair trials. We regret our inability to assist you further, but our advice would be for you to take the opinion of a trustworthy London physician (whose address we can send you, if desired, on receipt of a stamped addressed envelope) regarding the case you allude to in view of any special or recent modes of treatment which might be applicable thereto.

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Cremation. By Dr. Andrew Wilson. p. 232.
"Ex Luce Lucellum." An Account of the Manufacture of Lucifer Matches. p. 234.
The Physiological Action of Alcohol. By Edward C. Mann, M.D. p. 238.

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[The above letter, dated Sept., 1886, is from a medical gentleman in extensive practice in a large city in the North of Ireland.]

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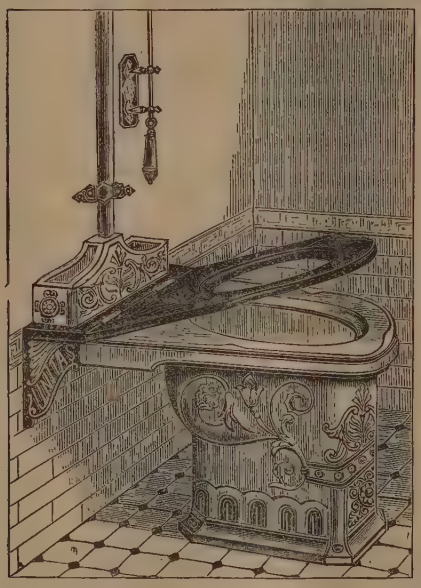

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◆ HEALTH ◆

EDITED BY

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LONDON: *FRIDAY, JANUARY* 13, 1888.

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Notes by the Way

BY THE EDITOR.

"Health is the foundation of all our physical happiness."—*Herder.*

To distinguish a drunken from a dying man has in practice sometimes proved a difficult task, as the police know only too well. An American physician says that the distinction can be readily made by simply pressing on the supra-orbital notches (or those over the eye-brows) with a steadily increasing force. The dying will not be affected, but the drunken will be aroused from his lethargy in such a way as to demonstrate his vital powers. The pressure must be firmly made by the tips of the thumbs while the patient is in a recumbent position. If this does not excite exclamations of pain or attempts on the part of the patient to remove the pressure, it is certain that the case is something more serious than alcoholism, hysteria, or malingering.

✣ ✣ ✣

IT is said that a lady, on whose face no spot or pimple was discernible, was lately photographed. On examining the proof the photographer was surprised to find the face was covered with black specs. A second photograph was taken with the same results. The following day the lady died of small-pox. The superior sensitiveness of the plate revealed what was invisible to the naked eye.

✣ ✣ ✣

I AM glad to note that cases multiply in which landlords are successfully sued for damages by tenants who have suffered in health through defective drainage of houses. At the end of November £100 were awarded as compensation to a gentleman whose daughter had died from disease produced by the defective drainage of the house he occupied. We are not aware of the particular circumstances of this case, says a contemporary, but as a general principle we think that the responsibilities of landlords who seek to make gain by letting houses which are, in point of health, unfit for human habitation need to be strongly pressed home; and every such case as the above aids in this direction.

✣ ✣ ✣

A VERY interesting return has been prepared by Parisian statisticians, showing the relative proportion of deaths from fever and other diseases in different parts of Europe. With regard to typhoid fever, Besançon heads the list with 205 deaths per 100,000 of the population. Toulouse and Marseilles come next with 118 and 108 respectively. Paris has only 46, Brussels 29, and London 17. The lowest death-rates are at Leipzig and Vienna, which give 11 each. England generally compares favourably with France, Liverpool having 34 cases and Manchester 33. Marseilles appears to have suffered greatly from small-pox, the number of deaths from this disease being 573 per 100,000 of the population. As regards scarlet fever, Holland heads the list with 285, St. Petersburg 93, Glasgow 68, Brooklyn 51, Liverpool 47, Paris 18, London, 17, and Rome only 5. The greatest mortality from consumption is in the large Austrian cities, and the smallest, contrary to general opinion, in English cities.

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WITH reference to my article in the present number, I note that cremation is so far making progress in France. As regards the crematory which has been erected in the Cemetery of Père Lachaise, says a report, two experiments have been performed in one of the furnaces with the bodies of two persons who died in the hospitals unclaimed by their relatives. The bodies were incinerated in the presence of M. Chassaing, Vice-President of the Municipal Council of Paris, accompanied by other functionaries, the process occupying two hours, and each corpse produced four kilogrammes of ashes.

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THE crematory is situated in the north of the cemetery. It has the shape of a parallelogram and is three storeys high, surmounted by two chimneys in white stone. In a report drawn up by Dr. Brouardel, he estimates that the furnaces will be able to consume 4,500 bodies annually, which is about the average number taken from the Paris hospitals each year. The Bill authorizing cremation in France has been passed by the Chamber of Deputies, and it only remains for the sanction of the Senate. Meanwhile, concludes the report, inhumation or incineration will be optional; but several generations will probably have to pass before cremation will completely replace inhumation, as, whatever may be the feelings of the French for their fellow-creatures during life, they have great respect for the dead, amounting almost to veneration. I would add that if we once succeed in teaching people how the buried dead may injure the living, the full adoption of cremation will then be a matter of an exceedingly short time.

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THE following "little joke" deserves to be chronicled anew. I take the extract from an American journal. "The marvellous results of some medicines, certified to by gentlemen of the cloth in the '*religious*' press, is aptly illustrated by the effects of a trade dollar, accidentally swallowed by a girl 'out West' a few months ago. Her life was at first despaired of, but after some six weeks' treatment and the use of a powerful specific for swallowing trade dollars, a number of red sores broke out all over her body, and when these were opened, a copper cent. was found in each. At the date of our report eighty-four cents. had been removed in this manner, and her physician was hopeful of her entire recovery of the whole amount swallowed with the possibility of compound interest."

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THE ratio of mortality of infants under one year of age to deaths from all causes is by recent statistics given as follows:—In Belgium, Denmark, Sweden, England, and Switzerland, 14·3 to 26·2 per cent. In the United States about 25. In Austria, Germany, and Russia, 31 to 48 per cent.; St. Petersburg, 32·5; Berlin, 58·1. In the city of New York, 32·2, and here three quarters of all the infants born and four-fifths of all those who die before they are five years old are of foreign-born mothers.

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DR. N. E. DAVIES writes as follows regarding the use of antipyrin in headache. His hints are very valuable as tending to place a remedy for a distressing complaint in the hands of physicians. "I firmly believe that chemistry has, in antipyrin, found a most invaluable remedy for migraine and other forms of headache that seem to be due to worry and overwork. In those cases where I have tried it, its effect has simply been marvellous. In one case of a lady who for years has been the subject of most distressing periodical attacks of intense pain referred to the occiput, that defied all ordinary remedies, this drug relieved at once, and in this case the depressing fear of impending attacks is now a thing of the past.

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"I PRESUME in these cases it acts as a powerful sedative to the nervous system, and, happily, leaves no ill-effects whatever—a great desideratum. Ten grains, repeated every hour for two or three hours, is my plan of giving it, and then at intervals of six hours for a day or two after, to prevent all chance of a recurrence, this generally being at the desire of the sufferer."

Original Essays

"Life is not to live, but to be well."—*Martial.*

CREMATION.

BY DR. ANDREW WILSON.

"IN most of our churchyards the dead are harming the living by destroying the soil, fouling the air, contaminating water-springs, and spreading the seeds of disease. . . . I have officially inspected many churchyards, and made reports on their state, which, even to re-read, make me shudder." These are the words of Sir Lyon Playfair, written in 1885. They contain the gist of the argument for cremation and against ordinary burial. The living are imperilled by ordinary modes of disposing of the dead; therefore, it remains for us to consider whether the time is not now ripe for the bold and persistent advocacy of cremation—the only safe, cleanly, and reverent way, withal, of mingling our common dust with the outer world, whence it was derived.

Sir Henry Thompson, in an interesting article published in the current number of the *Nineteenth Century*, ably reviews the position of affairs. Fourteen years have elapsed since Sir Henry wrote his first article in advocacy of cremation. Public opinion was against the idea then, as it invariably is when a new and startling change of fashion in anything is proposed; and opposition was all the more bigoted, because ignorance about cremation was universal. People spoke of cremation as if the process involved a spectacle similar to the funeral pyre of the ancients or of the Hindoos. Critics objected to the idea of flames and odours: ignorant that neither were to be found in connection with the crematorium. More rational people, perhaps, alleged that cremation would destroy evidence of poisoning, as if, forsooth, everybody died at the hands of a Borgia, or as if medical certificates as to causes of death were non-existent. Others, again, spoke of desecration of the dead, forgetting that what the earth is supposed to effect in the case of a dead body after a long period of years (and, as often as not, incompletely even then) cremation effects in an hour.

Others maintained that Christian burial was to be abolished, forgetting that burning the dead was practised by the early Christians themselves. Then came the ultra-sentimentalists, telling us to respect "God's acre" and to revere the quiet green field where the mounds marking the resting-places of our friends are the cherished memorials of those ever dear to our memory. These good people, however, neglected to think of the state of things below the ground in "God's acre." They did not heed or did not know of the loathsome corruption of the churchyard. They conveniently passed over the disgusting spectacle of the crowded cemetery, with bodies buried—huddled is the better word—anywhere and anyhow, separated by a few inches of earth only, and deposited often amid a soil which, so far from favouring the natural decay that is intended to occur in burial, actually preserved the corrupting masses to defile air and water and

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to endanger health. Finally, the objectors to cremation neglected to think of bodies buried full of the "germs" of disease—of cholera, of typhoid fever, of scarlet fever, of small-pox, and of other zymotic ailments. They did not appreciate the truth that these "germs" are not destroyed by long lodgment in the soil, and that they pass into water or come above ground again in divers ways, to re-infect humanity, and to bring sorrow and desolation on the children of men.

To-day, cremation is "looking up" as regards its prospects. A Cremation Society, formed in London in 1874, found its hands strengthened by a decision of Mr. Justice Stephen, that cremation, properly performed, so as to constitute no "nuisance" in any way, is a perfectly legal act. At Woking, near London, a crematory has been erected, and a goodly number of bodies have already been incinerated. That which remains for us who believe in cremation as a health-duty the living owe to themselves, is the public exposition and continued advocacy of the cause. Time works wonders in most things; and long ere another fourteen years have elapsed we hope to be able to congratulate Sir Henry Thompson on the universal adoption of cremation as a public movement, second almost to none in its effects upon the national health, and upon the saving of ground cumbered with the cities of the dead.

In speaking of the adoption of a crematorium by the London Cremation Society, Sir Henry Thompson says that "after much consideration it was decided to adopt the apparatus designed by Professor Gorini, of Lodi, Italy; and that gentleman accepted an invitation to visit this country for the express purpose of superintending the erection of it, and the plan was successfully carried out in 1879 by Mr. Eassie, the well-known sanitary engineer. When the apparatus was finished, it was tested by Gorini himself, who reduced to ashes the body of a horse, in presence of several members of the council, with a rapidity and completeness which more than fulfilled their expectations. This experiment foreshadowed the results which with numerous actual cremations have since been realized, namely, that by this process complete combustion of an adult human body is effected in about an hour, and is so perfectly accomplished that no smoke or effluvia escapes from the chimney; every portion of organic matter being reduced to a pure white, dry ash, which is absolutely free from disagreeable character of any kind. Indeed, regarded as an organic chemical product, it must be considered as attractive in appearance rather than the contrary."

The process itself, as carried out at Woking has also been attended to by our author. "The Woking Crematory was used for the first time on the 20th of March, 1885, two other cremations following in the course of the year. During 1886 ten bodies were burned, five male and five female, one of them that of a Brahmin. During 1887, up to the 30th of November, ten more bodies have been burned, one only being that of a female. The complete incineration is accomplished without escape of smoke or other offensive product, and with extreme ease and rapidity. The ashes, which weigh about three pounds, are placed at the disposal of the friends, and are removed. Or, if desired, they may be restored at once to the soil, being now perfectly innocuous, if that mode of dealing with them is preferred. One friend of the deceased is always invited to be present, and in almost every instance has expressed satisfaction with the way in which the proceeding has been carried out."

It may be interesting to our readers to hear the conditions which require to be complied with before cremation can be performed by the London Society. The conditions are as follows, and one important point consists in the Society's rule that a person may, by a donation of £10 10s. to the Society, ensure his or her body being duly cremated, provided the conditions in question be duly complied with:—

"1. An application in writing must be made by the friends or executors of the deceased—unless it has been made by the deceased person himself during life—stating that it was the wish of the deceased to be cremated after death.

"2. A certificate must be sent by a qualified medical man, who, having attended the deceased until the time of death, can state without hesitation that the cause of death was natural, and what that cause was. Another qualified medical man, if possible a resident in the immediate neighbourhood of the deceased, is also required to certify, after examining the facts within his reach, that, to the best of his belief, the death was due to natural causes.

"To each of these gentlemen is forwarded, before certifying, a letter of 'instructions' marked 'private,' signed by the president of the society, calling special attention to the important nature of the service required.

"3. If no medical man attended during the illness, an autopsy (or *post-mortem* examination) must be made by a medical officer appointed by the society, or the cremation cannot take place; unless a coroner's inquest has been held and has determined the cause of death to be natural. These conditions being fulfilled, the council of the society still reserve the right in all cases of refusing permission for the performance of cremation if they think it desirable to do so."

Abroad, cremation has progressed with relatively rapid strides. In Italy particularly, the movement has grown apace. Gotha, in Germany, has regularly followed the practice. In Paris the crematorium in the famous cemetery of Père la Chaise is in working order; and in Australia and America cremation bids fair to oust burial from its statutory place as a means of disposing of the dead.

Putting aside sentimental considerations as really beside the mark in face of the public dangers which cremation averts, and of the public good it ensures, the only remaining objection is that of medico-legal kind already noted. The bodies of persons poisoned may be cremated, and all traces of the crime thereby destroyed. This, it may be admitted, would be a grave argument against cremation were its force not very readily disposed of. Cremation as a public practice would firstly necessitate an infinitely more careful and searching inquiry into causes of death than is now made. In this light, the adoption of the practice would be a public good. In the second place, no cremation would be performed unless on production of a certificate of the cause of death signed by two medical men. Where such evidence of natural death was not forthcoming, the certificate of the *médicin verificateur*—the official certifier of deaths on the Continent—would be necessary before cremation was allowed to be performed. In a word, medical men would be even more on the alert than now in respect of certifying the causes of disease; and even, in any doubtful case, let burial, as Sir Henry Thompson remarks, be resorted to.

When we are told that of the 522,750 deaths of 1885, no fewer than 18,146, or 3·5 per cent., "were buried without medical certificate or any inquiry whatever," I must confess it seems to me rather late in the day for objections to be raised to cremation—a practice which,

as we have seen, would actually tend to make such cases special objects of rigid inquiry.

In conclusion, I may quote the chief provisions which Sir Henry Thomson considers should be formulated in any Bill introduced into Parliament to regulate death-registration and disposal of the dead:—

"1. No body to be buried, burned, or otherwise disposed of without a medical certificate of death signed, after personal knowledge and observation, or sufficient inquiry by a qualified medical man.

"2. A qualified medical man should be appointed in every parish or group of neighbouring parishes, whose duty it will be to examine in all cases of death and report the cause in writing, together with such other details as may be deemed necessary.

"3. If the circumstances of death obviously demand a coroner's inquest, the case goes into his court and the cause is determined, with or without autopsy. If there appears to be no ground for holding an inquest, and autopsy be necessary to the furnishing of a certificate, the appointed officer will make it and state the result in his report,

"4. No person or company to construct or use an apparatus for burning human bodies without a license from the Home Secretary or other officer as determined.

"5. No crematory can be so employed unless the site, construction, and system of management are approved after survey by an officer appointed by Government for the purpose.

"6. The burning of a human body, otherwise than in an officially recognized crematory, shall be illegal and punishable by penalty.

"7. No human body shall be burned unless the official examiner who signs the certificate of death shall, in consequence of application made, add the words 'Cremation permitted.' And this he is bound to do if, after inquest or autopsy, or in any circumstances admitting in his mind no doubt as to the cause of death, this is returned by him as natural."

Hereafter, one may only add, cremation, thus justified by every consideration—social and sanitary—should soon become "the way of burial," and enable us to dispose of our dead, with every feeling of tenderness, and with every care for the living, whose "little day" we desire to expand out into a long and healthy period of existence.

"EX LUCE LUCELLUM."

A Short Account of the Chemistry, History, and Manufacture of Lucifer Matches.

BY E. GODWIN CLAYTON, F.I.C., F.C.S.,
Member of the Society of Public Analysts, &c.

THIRD PAPER.

THE final processes in the manufacture of matches, of whatever kind, are the "drying" and "packing," and these do not need a detailed description. But that the drying is a necessary and important operation will be obvious when it is remembered that the igniting composition, whatever its exact ingredients and their proportions may be, is always a semi-fluid or pasty mass, having as its basis glue or some similar cementing material, and containing a considerable quantity of water, which must, of course, be expelled from the composition coating the dipped splint-ends.

A sketch of the history of the gradual development of the match industry will not unfittingly include references to several contrivances introduced at different times—not *matches*, but inventions at all events coming under the category of instantaneous light and heat-producers. Until the close of the 18th century, as has been already indicated, the flint, steel, and tinder-box were universally employed, either touch-paper or German tinder ("amadou") being occasionally substituted for the ordinary tinder. These were the times of "primitive methodism." Even now, however, an apparatus is occasionally used by smokers in which a thick touch-thread is caused to smoulder by a spark produced by the friction of a thin plate of quartz against a piece of steel. The aboriginal inhabitants of Britain no doubt used the device still employed by savages, and sometimes perforce by travellers, *i.e.*, friction of two pieces of dry wood. Immediately after the discovery of phosphorus in 1673, many persons who could afford to do so procured the costly luxury, its easy ignition by mere friction having become known. A minute fragment, rubbed between the folds of coarse brown paper, took fire and ignited a sulphur match applied to the flame.

Godfrey Hanckwitz, already mentioned, made and sold large quantities of phosphorus for this purpose; he also travelled about to exhibit and sell the article. In spite of this, the introduction of phosphorus was far from general, and its employment as a source of light and heat remained very limited for about a century and a half after its discovery. This is not a little remarkable, but is probably explained by the costliness of the substance, and by its extremely dangerous character, rendering it a body the handling and management of which only became understood by slow degrees. Various crude attempts, however, were from time to time made to utilize this element. Such were the "Phosphoric Tapers," which were small wax tapers, with phosphorus-coated wicks, enclosed in hermetically-sealed glass tubes. To obtain a light, one end of the tube was cut off with a file; the phosphorus quickly inflamed on exposure, and ignited the taper. This device was found to be dangerous, and to be inferior to the friction with brown paper. Tightly-corked small phials containing a little partially-oxidized phosphorus were also tried. A brimstone match was dipped into the phial, withdrawn with a little phosphorus adhering to it, and rubbed against a wooden or other surface; inflammation at once ensued.

Homberg's "Pyrophorus," or "Fire-Bearer," was another kind of instantaneous light and heat-producer: it was a black powder, containing *no* phosphorus, and, when exposed to the air, oxidised and burst into flame. Volta's Inflammable Air Lamp, the Pneumatic Tinder-Box or Light-Syringe (in which a piece of German tinder was ignited by the heat evolved on the sudden compression of enclosed air by a piston), and Döbereiner's Lamp were all mechanical contrivances with the same end in view, viz., the production of instantaneous light and heat, but none of them were suitable for daily practical use: they were little more than scientific toys; and as they did not depend upon the same principle as lucifer matches, they will not be described here in detail. Mention may, however, be made of the Galvanic Battery and Platinum Wire; in which a sulphur match was kindled by contact with touch-paper, ignited by a white-hot platinum wire connected with opposite holes of a small galvanic cell.

In the year 1805, a step in advance was made, the so-called "Oxymuriate" matches being introduced. Invented by Chancel, assistant to Thénard, of Paris, these matches consisted of strips or splints of wood, the ends of which were coated with a mixture of potassium chlorate, sugar, and gum. When the coated ends were dipped in a bottle containing some fibres of

asbestos soaked in sulphuric acid, peroxide of chlorine was produced by chemical action of the acid on the potassium chlorate, and this powerful oxidising agent at once acted on the sugar, inflammation resulting. The matches and bottle of acid-soaked asbestos were sold in *moirée metallique* cases, called "phosphorus boxes," the word phosphorus being here used in allusion only to light-bearing or light giving properties. These cases were also called "Inflammable Match Boxes" and "Briquets Phosphoriques." The many defects in the originally contrived apparatus, such as absorption of moisture by the acid and consequent imperfect ignition of the matches, accompanied by projection of drops of acid on to the clothes of the user, want of uniformity in the quality and character of the composition (sometimes giving rise to a general inflammation or "flare up"), rotting of the cork of the asbestos-bottle, &c., necessitated successive modifications and improvements. The price of the cases descended from fifteen shillings to ten shillings, then to five shillings, and lastly to half-a-crown, the matches being sold at a shilling per hundred. The final and most successful form in which cases of oxymuriate matches were sold was Heurtner's "Eupyrion," and consisted of two canisters soldered together, a long one for the matches and a shorter one for the little sulphuric acid phial, the cork of which was covered with lead foil. The match composition was good, the acid strong; and the price of the Eupyrion being only a shilling, it had a large sale. The years 1809, 1816, and 1823 saw various attempts at overcoming the almost insuperable difficulties which up to this time had stood in the way of the employment of the element phosphorus as an instantaneous light and heat-producer: the time, however, was not yet ripe for the attainment of this end, and the matches made in these years were failures. In the year 1823 was also introduced Döbereiner's Lamp (see *ante*.)

AMERICAN WAGES IN 1800.—The condition of the wage class of that day may be well examined; it is full of instruction for social agitators. In the great cities unskilled workmen were hired by the day, bought their own food, and found their own lodgings. But in the country, on the farms, or wherever a hand was employed on some public work, they were fed and lodged by the employer and given a few dollars a month. On the Pennsylvania canals the diggers ate the coarsest diet, were housed in the rudest sheds; and paid 6 dols. a month from May to November, and 5 dols a month from November to May. Hod-carriers and mortar mixers, diggers and choppers, who, from 1793 to 1800, laboured on the public buildings and cut the streets and avenues of Washington City, received 70 dols. a year, or, if they wished, 60 dols. for all the work they could perform from March 1st to December 20th. The hours of work were invariably from sunrise to sunset. Wages at Albany and New York were three shillings, or, as money then went, forty cents a day; at Lancaster, 8 dols. to 10 dols. a month; elsewhere in Pennsylvania workmen were content with 6 dols. in summer and 5 dols. in winter. At Baltimore men were glad to be hired at eighteenpence a day. None, by the month, asked more than 6 dols. At Fredericksburg the price of labour was from 5 dols. to 7 dols. In Virginia white men employed by the year were given £16 currency; slaves, when hired, were clothed, and their masters paid £1 a month. A pound Virginia money was, in Federal money, 3·33 dols. The average rate of wages the land over was, therefore, 65 dols. a year, with food, and, perhaps, lodging. Out of this small sum the workman must, with his wife's help, maintain his family.

Personal Health

"Be timely wise;
With health all taste of pleasure flies."—*Gay.*

NEW DRUGS OF THE YEAR.

ASIDE from prevention, the ultimate aim and end of medical science must, or should, be the cure of disease. The year just past has increased our knowledge in this regard, and placed at our disposal one of the most remarkable agents ever known to medicine. We refer to Saccharin, that curious coal-tar product, which possesses two hundred and seventy-five times the sweetening power of cane sugar, and which is neither food nor poison. It passes out of the body in the same form as it is taken in, without affecting apparently the health of the individual in the least. It has been given in quite large doses daily for months without producing in either the healthy or invalids the slightest untoward symptoms. The usefulness of this new sweetening agent has already been pointed out in our columns, as, indeed, have all the newer remedies which could interest the public. But a further reference recalls it to mind.

It is well known that in diabetes the urine in one variety is heavy with sugar, and that all farinaceous or saccharine foods are considered bad. But as a diet deprived of these becomes in a short time more or less unbearable, there has been heretofore no recourse but to allow sugar to be added to the meals. Henceforth a diet may be made palatable, though sugar is absent, simply by the addition of Saccharin. The most convenient form is the Tabloids, which are soluble, perfectly reliable, and uncontaminated with sugar of milk, mannite or gluten.

The next interesting product of the year is Pinol. This is an essence of the needles of the pumilio, a pine which grows on the snowy heights of the Alps, and characterized by its superior sanitary properties and the exquisite redolence of its exhalations. Pinol does away with the need of resorting to pine woods in order to inhale the impregnated air, as directions are now given for medicating the air of one's own house with the rare essence of the choicest of all pines. The drug is supplied in the form of an extract for use in baths, and on plasters. The Pinol may be taken internally on a lump of sugar, or employed in the form of inhalations. It is well adapted for external application. Pinol is mainly useful in catarrhal and pulmonary troubles, renal affections, gout and rheumatism, and as an embrocation in lameness, stiffness, &c.

Lanoline has been made perfect this last year, and is now of a light cream tint, odourless, and slightly adhesive. It constitutes the best basis for ointments, pomades, cold creams, and soaps.

A fuller knowledge has come to us respecting two very important drugs for reducing the temperature in fevers; we refer to Antipyrin and Antifebrin. The latter is perhaps somewhat safer in fevers, but is only soluble in spirit, as brandy, &c. Antipyrin, on the other hand, is soluble in two parts of water, and possesses the property of relieving

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pain in neuralgic affections. The dose is two or three five gr. Tabloids.

We have changed our ideas of giving cod liver oil, and the disposition of the profession is to give this food with other food at meals. That is to discard oil mixed with potash, which forms a soap; mixed with essential oils, which cause eructations; and mixed with gums, which readily decompose and turn the cod liver oil rancid. The order of the day seems to be oil in solution, and accordingly there is an increasing demand for the Kepler Solution, which is cod liver oil and extract of malt.

PROPRIETARY MEDICINES: SHOULD PHYSICIANS PRESCRIBE AND RECOMMEND THEM?

THE *St. Louis Medical and Surgical Journal* thus answers the above question:—"Should the physician use in his daily practice a 'proprietary' medicine? Can he, as a reputable practitioner, recommend these preparations in his correspondence with medical journals without lowering the dignity of his profession or making himself amenable to discipline for a violation of time-honoured principles of medical ethics?"

These questions have been put to this journal, and perhaps to others, with the request that they be answered editorially; and while, as put, they are very broad, admitting of much latitude in replying, we think we but voice the general opinion of those who have given the subject any thought in answering both of them, in a general way, in the affirmative.

The gist of the whole matter depends upon what is meant by the term "proprietary medicine." In its limited and best sense we understand by the term a remedy of which the ingredients and their proportions are made known to the profession, and the trade or proprietary name of which is alone protected by law. When such preparations are made exclusively for the use of the medical profession, and are advertised exclusively in medical journals, we cannot see any possible lowering of professional dignity or deviation from "time-honoured principles of medical ethics" on the part of the physician who uses them in his daily practice or who recommends them in his communications to medical journals.

The name, in this class of proprietary medicines, is to be regarded simply as the guinea's stamp—a guarantee of the purity and genuineness of the product, and the registration of it; patenting it, if you please, is as much for the protection of the physicians who use it as for the parties who manufacture the remedy. It in no sense makes the drug a "patent medicine" any more than does the writing of "Fairchild" before pepsin, "Merck" before or after an alkaloid, or "Schering" or "Squibb" before chloroform, transfer these chemicals into that category. These men—Merck, Schering, Fairchild, Squibb, and a few others—have devoted their lives and spent enormous sums of money in making their products the purest and best that can be attained by human honesty and human ingenuity; and as a reward their names attached in *copyrighted labels* to their chemicals stand as a perpetual guarantee to the physician and patient against the fraud and greed of less honest manufacturers; and it would be a great injustice to them, as well as to the profession and public, to deprive them of this guarantee.

The question may be and frequently *is* asked by the purists, usually by the very old or by very young members of the medical or pharmaceutical profession, aspiring to be considered very scientific, "Why should a physician resort to these ready-made prescriptions at all? Why does he not draw upon his own knowledge of applied therapeutics, and write out his own formulæ in every case? Why does he prescribe this one's sugar-coated pills or that one's gelatin covered granules?"

Why, indeed? Simply because he knows that these articles, being made in vast quantities, by improved apparatus and appliances manipulated by highly-trained and educated employés, and directed by skilled chemists, can be made better, more accurately, and far cheaper than they could be compounded by the most skilful prescriptionist. He does it for the same reason that he buys a watch ready made from the jeweller, or a buggy ready made from the carriage-maker.

The most serious charge that is brought against the makers of some of the best-known, most valuable, and most frequently used proprietary medicines, is that the formulæ given by the manufacturers are not the true ones, or, as Dr. Craighill, of Lynchburg, Va., in a paper read before the Virginia Pharmaceutical Association, at its last May meeting (published in the *Virginia Medical Monthly* for June, 1887), puts it, "a patented proprietary remedy which professes to publish its formulary, *but does not.*" If this charge were true, it would indeed be a grave one and a just cause for the banishment of such medicines from the list of those which the physician may use "without lowering the standard of professional dignity," &c.

But when we examine into the matter, we find the sole ground for the charge to be that when the ingredients as named are put together by the physician himself, or by the prescriptionist, off-hand, though it may be *secundem artem*, the result frequently differs very widely from the preparation which it is intended to imitate. This fact would go far to prove the charge did we not remember that in all chemical processes *manipulation* has a great deal to do with results, and that the *element of time* has a value that nothing else can supply. A mixture in which no amount of shaking will produce combination or solution off-hand, or no amount of filtration will clarify, will frequently become perfectly limpid when given the requisite length of time. We are informed by Mr. Lambert that Listerine requires eleven days in its preparation, and Messrs. Battle & Co. tell us that Bromidia, for instance, requires six days for the thorough combination of its ingredients. We have no doubt that many other such remedies require even more time for their perfection, and no amount of skill on the part of the pharmacist can possibly make up for this element in their preparation. These facts are fully recognized in France and Germany, and we find the highest class of the medical journals of these countries full of advertisements and notices of preparations exactly analogous to our proprietary remedies.

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The Family Circle

"The child is father of the man."—*Wordsworth.*
"In bringing up a child, think of its old age."—*Joubert.*

WRONG NAMES FOR COMMON THINGS.

IN the early days of chemistry there was no definite system of nomenclature; but each discoverer of a new substance applied such names as his fancy dictated, or were suggested by some fanciful resemblance, which, in the light of modern knowledge, often seems ludicrously inappropriate.

Thus, oil of vitriol is not in any sense an oil; neither, strictly speaking, is oil of turpentine, or even kerosene. Copperas is a salt of iron, and contains no copper. Butter of tin or antimony only slightly resembles butter in appearance. Salts of lemon is the highly poisonous oxalic acid, and its unfortunate name has caused many fatal accidents. Carbolic acid is not an acid at all, but allied to the alcohols. What is sometimes known as cobalt does not contain any of that metal, but is metallic arsenic. Seidlitz powders have nothing to do with the waters of the famous mineral spring. Soda-water does not contain a particle of soda, nor sulphuric ether any sulphur.

Sugar of lead contains no sugar, nor has cream of tartar anything to do with the lacteal secretion of the cow. The same may be said of milk of lime. The word "oxygen" means the acid-former; but, according to the new chemistry, not oxygen, but hydrogen, is the element indispensable to the composition of an acid. German-silver contains no silver, and black-lead no lead. Mosaic gold is a sulphide of tin, and has no gold in its composition, nor is it used in the manufacture of mosaics. Putty-powder, an oxide of tin, is not to be found in any ordinary kind of putty.

In other departments of science similar errors are not uncommon. The rocks of the azoic (no-life) age are now found to contain fossils. The mineral pyroxene occurs in igneous rocks; while its name, derived from the Greek, means "a stranger to fire." Platinum is from the Spanish, meaning "little silver," but, as is well known, has no relation to that metal. Réaumur's porcelain is not porcelain at all, but a peculiar kind of glass. Jerusalem artichokes are not artichokes, neither do they come from Jerusalem. The camelopard, or giraffe, has no relation to either of the animals from which his name is compounded. Shell-fish are not fish, but mollusks. The civet-cat is not a cat, and the sea-horse (which is a little fish) is very far removed from the land animal from which it takes its name.

This list might be extended indefinitely; but the examples given will show that names as well as appearances are deceitful, and that the nature of a thing cannot always be accurately predicted from its usual appellation.

To the unprofessional reader, certain names of organic chemical compounds might be considered as errors of nomenclature. When a term like "methylprotocatchuicaldehyde" is necessary to describe the odoriferous principle of the vanilla-plant, it certainly seems as if it was a rather drawn-out appellation; but in this and similar cases the entire chemical relations of the substance are indicated to the chemist by such a term, and the number of organic compounds is so large, that it would be impossible to find short and appropriate names for them all. When the compound, like the one referred to above, is of any practical use, a shorter one is easily devised—"vanillin" being the common name in this case; but for the innumerable substances which are of interest only to the chemist, these polysyllabic atrocities are almost indispensable, and convey information regarding their nature which could be briefly stated in no other way.

LOOFAHS.

THE loofah or towel gourd (*Luffa Ægyptica*) is indigenous to Egypt and Arabia, but is grown extensively in Western Africa and the West Indies. The plant, a cucurbitaceous one, is a climbing vine which frequently attains a length of thirty feet. It is chiefly remarkable for its ovate fleshy fruit, of which it seldom bears more than a dozen, varying in length from six inches to two feet. This fruit in the fresh state is elliptical ovate, and has a green epidermis, marked longitudinally with black lines. It is the close vascular network of this fruit, freed from the epidermis, pulp, and seeds, which forms the loofah, so familiar to chemists for a dozen years or more.

The natives of the countries in which the towel gourds grow have long used them as scrubbing brushes and as strainers. To prepare them for these purposes the epidermis is removed, and the peeled fruit then thoroughly washed in water and beaten so as to remove the mucilaginous pulp and the seeds. Although loofahs have long been used by natives for washing purposes, we have heard it said that their introduction into this country for similar purposes was a mere accident. A consignment of them was received here, but no one knew what they were for. They ultimately got into the hands of a merchant as payment of debt, and he more than repaid himself by selling them as a sponge substitute for the bath. When the stock was exhausted several years elapsed before another supply was received—indeed, on this occasion they were placed on the market as a perfect novelty.

The loofah is imported in the uncut state, our own wholesale merchants generally giving it the longitudinal incision which makes it a flat and serviceable flesh-brush. The gourd is also used for making fancy toilet articles, which are so highly thought of in the West Indies that a sample (a small basket) was sent to the Queen as a Jubilee present, and was shown in St. James's Palace. Recently the uses of the loofah have been greatly extended by a German manufacturer established at Halle on the Saale. He makes from them loofah soles, which have to a large extent replaced those made of straw and felt. The loofah soles warm the feet in winter and cool them in summer, keeping them constantly dry. They are extremely elastic, and easily washed with soap and water. Saddle under-cloths are also made from loofahs, which have the virtue of preventing the animal from remaining wet under the saddle after sweating. But what may be considered the most important application of the loofah is in the manufacture of surgical bandage stuffs. Bandages made of this material are competing closely with the wood-wool kind, which were introduced some time ago.

There are unquestionably other uses to which the loofah might be applied, and as enormous quantities are obtainable at a low rate (some bales were a year ago sold in London at the rate of five a penny), further applications are only a question of time. The seeds of the loofah contain fixed oil, but this in too small quantity (2·5 per cent.) to pay for its extraction. The mucilaginous matter is so rich in bassorin that an infusion of the fruit becomes almost solid on cooling. A

congener, *Luffa Bandaal*, is used in India medicinally as a remedy for carbuncle. For this purpose an infusion of the fruit is used as a fomentation, which causes the slough to come out entire.

There are other species which are possessed of medicinal properties. The two species, *L. purgans* and *L. drastica*—the fruits of which are known as American colocynth—possess powerful purgative properties, as might be expected of cucurbitaceous plants. Several are of a bitter character, *e.g.*, *Lechinata*, an Indian plant, the fruit-fibre of which, according to Dymock, is intensely bitter, and is used medicinally by the Hindoos. This loofah is quite a tiny fruit, being no larger than a nutmeg. As to the use of the ordinary loofah, we find that the uncut kind is much more lasting than the other, although, as a flesh-rubber, it is not so effective as the interior surface.—*Chemist and Druggist.*

BENEFITS OF EXERCISE.

MEN of sedentary habits should have recreation largely of a physical nature. A brisk walk is what physicians most frequently recommend for exercise; but for a person not accustomed to exercise, this is not always beneficial, for, his brain being the only part of his body that is kept in activity, the exercise forces the blood into the head, and he returns home with a severe headache. Such a man should take passive exercise, such as rowing, sailing, or hunting, where his mind could be in slight activity also. The majority of men engaged in mercantile pursuits get enough physical exercise from their everyday life, and their recreation should be of mental nature. A few days in the country, a change of scenery, is beneficial to everyone.

Stockbrokers and bankers require a very quiet recreation, but instead they try to get their recreation from the most exciting of sports, which is really no change from their daily life. Mechanics and clerks are recommended to attend light entertainments, such as concerts or lectures, or to play cards, chess, checkers, or other games of that nature. Women and children, the former especially, rely too much on excitement for recreation, and carry it to such an excess that it becomes simple dissipation. A distinction must be understood between excitement which invigorates and excitement which exhausts. Dancing and roller-skating are excellent exercises, but under the excitement of the music, they are too often continued to exhaustion.

THE curvature of the earth is such that a straight line a mile long would be 2·04 inches from the surface at either end.

CONVICTS.—There has been during recent years a steady decline in the convict prison population. From 1869 to 1873 inclusive the number ranged between 11,000 and 12,000; from 1874 to 1883 inclusive, from 10,000 to 11,000; since which date the decrease each year has been marked and regular, the number in July last standing at 7,441. There has also been a remarkable decrease in the number of female convicts, which in the last ten years has fallen from 1,477 to 706. There has been, we are told by the Directors of Convict Prisons in their report for the year 1886-7, a great and progressive decrease in the sentences for serious crimes. Altogether the record, showing a very remarkable diminution of crime, is extremely satisfactory.

Popular Science Papers

"Blessings on Science! When the Earth seemed old,
When Faith grew doting, and our reason cold,
'Twas she discovered that the world was young,
And taught a language to its lisping tongue."
—*Charles Mackay.*

THE PHYSIOLOGICAL ACTION OF ALCOHOL.

BY EDWARD C. MANN, M.D. (F.S.Sc., LOND.)

Member New York County Medical Society, American Association for Cure of Inebriates, &c., &c., Brooklyn, New York. Physician to Sunnyside Home for Inebriates, the Morphine Habit and Diseases of the Nervous System, Brooklyn, N. Y.

SECOND PAPER.

WE will now proceed to look in regular order at the different functions of the body and examine the diseases which alcohol produces in them. The human body is composed of organs destined to accomplish the acts of life called functions. These functions are divided into two distinct classes. First, the functions of nutrition. Second, the functions of relation. To the nutritive functions are assigned the apparatus of digestion, circulation, and respiration. To the functions of relation, the apparatus of locomotion, the nervous system, and the organs of sense. Looking first at the functions of nutrition, the purpose of which is to provide for the preservation and increase of the human body, we will see what the physiological effects of alcohol are upon digestion, circulation, and respiration, and then passing on to the functions of relation, see what the physiological effects of alcohol are upon the brain and nervous system and the organs of sense.

1. *Physiological effect of alcohol upon Digestion.*—Digestion, as it is well known, is a function which causes the alimentary substances introduced into the digestive apparatus to undergo different modifications, having for their object the transformation of those substances into two parts, the one nutritive, the chyle which renovates the blood and builds up our organs, and the other non-assimilable, excrementitious part which is cast off from the system. Alcohol irritates the stomach and injures it, inducing a large number of human ailments due to the deranged nutrition set up by alcohol. Inflammatory dyspepsia and gastric catarrh and changes in the gastric juice are very common, and ulceration sometimes occurs. A great deal of disease proceeds from malnutrition, and derangement of the digestive process disturbs the life's system at its very source. The surface of the stomach in alcoholics presents a widely different appearance from that of water-drinkers. It presents a mamilated appearance and a brownish-grey colour with patches of congestion. Food is of no earthly use to a person beyond his power of assimilating it, and alcohol destroys the power of assimilation. The use of alcohol, particularly before meals, is the cause in this country of a great deal of disease affecting the digestive system. The very worst thing a man can do is to take alcohol before breakfast, fasting. This is provocative of more chronic dyspepsia than all other causes combined. A morbid hyperæmia of the stomach is induced which quickly results in inflammation. The liquids unsuited for nutrition are eliminated from the body in large part by the kidneys. The use of alcohol retards tissue metamorphosis and thereby decreases the excretion or elimination of effete matter, or impurities contained in the blood, so that from the abnormal accumulation of hydrocarbonaceous material the individual increases in weight, but such persons always exhibit a corresponding decrease in nervous and

muscular stamina. Alcohol being a foreign body disturbs the action of the kidneys and irritates them and is eliminated in great measure as alcohol by them. It has no claim to be regarded as food, Liebig and others to the contrary notwithstanding. The kidneys become congested in alcoholics, and many cases of Bright's disease ending in death are directly traceable to alcohol.

2. *Physiological action of alcohol upon circulation.* The circulation comprises the transmission of the blood from the respiratory apparatus to all the organs of the body and the return of the blood from these organs to the same apparatus. The effect of alcohol on the blood and circulation is, that the blood becomes impure and unfit to nourish the body and its organs. The heart may become enlarged, fatty, and soft and liable to break down very suddenly. In quantities of varying degrees, alcohol affects the blood, making that fluid unduly thin or coagulating it, according to the absorption of it into the circulating system. It acts on the blood corpuscles, causing them to undergo modifications of size and reducing their power of absorbing oxygen. It changes the natural action of the heart, causing it to beat with undue rapidity and increasing the action in extreme instances to such a degree that the organ in adult man is driven to the performance of an excess of work equal to the labour of lifting over twenty-four tons one foot in twenty-four hours.

3. *Physiological action of alcohol on respiration.* The respiratory function has for its object the transformation of the dark, venous blood into red, arterial blood. Alcohol congests the lungs, predisposing to pleurisy, pneumonia, and one form of consumption or phthisis. The lungs, like all the other vital organs, have their delicate vascular structure governed by the nervous system or current, and by reason of their weakened blood-vessels are congested or overfilled with blood, just as we see the face and hands of an alcoholic flushed with wine. The nervous power of the lungs is paralyzed by the alcohol and a very fatal form of consumption, known as fibroid alcoholic phthisis, induced. The action of alcohol on the throat, mouth, and nose is that of affecting the delicate mucous membrane lining them, and causing a husky voice or chronic catarrh.

FUNCTIONS OF RELATION.

1. *The physiological action of alcohol on the bones, muscles, and joints.* The growth of the skeleton or frame of a child may be checked by alcohol, and in surgery it is found that the broken bones of habitual drinkers do not unite readily, and that the *periosteum* readily becomes inflamed, giving rise to chronic troubles. The effect of alcohol on the muscles is to make them weak and flabby by changing them in part to fat. The effect of alcohol on the joints is, that a moderate sprain, which in a healthy adult will readily get well, will in an alcoholic result in a *synovitis*, or inflammation of synovial membrane—hard to cure.

2. *The physiological action of alcohol on the nervous system and mind.* The nervous system presides over voluntary acts and sensations, while the acts which are independent of the will, such as the beating of the heart, &c., are placed under the influence of a special nervous apparatus called the great sympathetic system. The brain is the perceptive and exciting centre of all of our physical and moral acts. Alcohol first excites and then depresses and paralyzes the action of the brain and nerves. The higher faculties are the first to be paralyzed, leaving the man under the dominion of his emotions, passions and lower animal instincts. It obscures the senses and confuses the judgment. Alcohol produces nervous prostration which may eventuate in apoplexy, paralysis, insanity or epilepsy. Fully one-fourth of all the admissions to the insane asylums, both in this country and in Europe, are due either approximately or remotely to alcohol. We say this from an extended search of the published statistics, both at home and abroad, of insane asylums.

Health is the first question in the science of political economy. It is a question which belongs to the wealth of the nation and to the prosperity of the people. It is the healing of disease by physicians, in its effect upon communities, which covers and governs a material fact in political economy. We know what ravages intemperance has produced in this country and in the world; how many lives it has destroyed, how much misery it has produced and distributed, how much wealth it has diminished. The lessening or removal of the prevalence of this calamity has been partly the work of physicians, and a large share of it belongs to liberal and intelligent men and women. This work, often a volunteer service, has been inspired by the noblest motives, and has again and again produced the grandest results. The state, politically, and the people, personally, have the deepest interest in the prevention of the poverty, pauperism, orphanage and bankruptcy due to intemperance. The State and Federal Government should not hesitate to act forcibly and promptly for its removal.

When countries are visited by epidemics, temperate communities resist disease far better than intemperate ones. The alcohol habit weakens the constitution, so that it cannot resist the cholera, yellow fever, &c. It is the duty of the State to educate the masses, so that they may understand that preventible disease exists in a great measure as a result of ignorance and the violation of physical, moral and intellectual laws, and a neglect of sanitary precaution. The public sentiment with respect to the evils resulting from the alcohol habit must be enlightened and changed, before prohibitory laws and statutes will avail. When the masses can be made to understand that by intemperance they are destroying not only their own physical, moral and intellectual health, but that of their offspring, on whom this curse is inevitably entailed by the laws of hereditary transmission, then, and only then, will this disease—for disease it is—be abated. Everywhere we meet with practical evidence of a widespread faith in the nutritive and strength-sustaining power of alcohol.

Now, what does the alcohol do in the case of a person who feels badly and feels that he or she needs something to invigorate them? It merely diminishes the nervous sensibility of the individual, so that it lessens his consciousness of impressions, and acts as a sedative by retarding tissue metamorphosis. Its daily use, even in moderation, except when ordered by a physician as a remedy in disease, diminishes the temperature, the strength and endurance of the individual who takes it habitually, and increases his predisposition to disease. It impresses a peculiar morbid influence on the brain and nervous system, which, if the habit be indulged in, becomes a permanent pathological impression, and results in the formation of an irresistible or insane impulse to seek for the relief obtained from alcoholic stimulants. In this state of *dipsomania*, the control which the intellect normally exercises over the moral senses is overborne by the superior force derived from disease. We also often see brilliant men and women undergoing a series of painful mental changes, due to the morphine habit. The mind in these persons, when unaided by the

stimulus of morphine, becomes barren and unproductive.

The physician cannot make his diagnosis, the lawyer cannot carry on his case, the clergyman cannot write his sermon and the lady of society cannot entertain, until each and everyone has had his or her usual allowance of morphine. The morphine temporarily rejuvenates, but in a short time this deceptive health is replaced by pallor, pain, and distress, and a generally miserable condition which can be relieved only by a morphine hypodermic again or by alcohol, if the person is an alcohol habituate. The intellectual man finds that he can only command his intellect through the agency of morphine, memory begins to become weakened and attacks of vertigo come on. If the morphine habit be not stopped by medical treatment at this point, irritability passes into suspicion, voices are heard, illusions of the special senses are experienced and intellectual helplessness and physical changes advance. One limb may become weak, one pupil may dilate, and if an excessive or even moderate use of morphine be still indulged in, the victim has no other prospect than to end his days in a state of degraded intellectuality and muscular paralysis.

In the alcohol habit there exists a departure from a healthy structure of the nervous apparatus. It is this abnormal condition of the centric nervous system, set up by the use of alcohol, and demanding the unnatural stimulus of alcohol, that is essentially the disease. The alcohol *habitué*, like the morphine *habitué*, is in a state of unrest and pain, and the urgency for relief is so great that the will has not the power to resist. We know of no disease more requiring careful methodical treatment for a sufficient length of time than the alcohol, and also the morphine, habit, and there is a reasonable certainty of cure if this is done and not otherwise. Such a person needs to submit to treatment long enough to perfectly build up the physical, moral and intellectual health, or there will be an inevitable relapse into the old habit the first time he or she may suffer physical or mental pain or prostration.

M. FOURNIER DE FLAIX says that "Alcohol is a new food-stuff whose consumption depends directly on the exigency of the climate; climate is the law of alcohol. Alcoholism is the abuse, the bad use, of a food which is necessary, but is hard to control."

HEALTH AND AMBULANCE LECTURES.—The Combe health lectures to teachers were delivered as usual last year by Dr. Andrew Wilson, the subject being "Health as related to the House and the School." These lectures are to be continued this year. In addition, a very extended scheme of popular lectures is being carried out by Dr. Wilson in the chief towns of the West of Scotland. A course of lectures on physiology and one on hygiene have been established by the Glasgow and West of Scotland Technical College. The classes are meant to be popular, and are held in the evening. The lecturers are Dr. John Barlow and Dr. James Christie. They have been attended as yet by only a moderate amount of success. The popularity of ambulance classes does not seem yet to have reached its height. Classes for ladies, for gentlemen, for railway servants, for mechanics, for policemen are everywhere the order of the day. The St. Andrews Ambulance Association is finding work increasing on its hands with great rapidity. The Committee has drawn up a very valuable scheme of lectures on sick nursing, which is being successfully carried out among the female portion of the community. *British Medical Journal.*

Public Health

"Health is the first Wealth."—*Emerson.*

THE GEOGRAPHY OF TYPHOID FEVER.

IN an interesting article on this subject, the *Lancet* remarks that "It has been said that typhoid fever has no geography. Its prevalence, no doubt, has a relation to heat, and there is more of it in tropical, semi-tropical, and temperate climates than in cold ones; still, allowing for differences of degree, it seems to prevail everywhere. Whether its causes are invariably the same in all countries may be, and is, a disputed point, but that it is a disease amenable to the operation of sanitary measures is well-nigh universally acknowledged. The deaths from this disease in England from 1861 to 1870 were at the rate of 19,000 per annum; whereas from 1871 to 1880 they fell to 7,000 per annum; and at Frankfort-on-the-Maine and at Dantzic we have statistical proof of the remarkable decline of this disease since the introduction of proper systems of sewerage and water-supply into those cities.

"Our attention has been called to this subject in connection with a report thereon by the members of the Central Board of Health for the colony of Victoria, which has been presented to both Houses of Parliament by command of his Excellency the Governor. Typhoid fever is never altogether absent, but the colony has this year been visited by an epidemic. The same law that holds good for England and America equally applies to Australia—viz., that typhoid fever chiefly prevails towards the end of the summer, and especially in autumn, and after periods of long drought. But the members of the Central Board of Health in their report rightly dwell on the fact that seasonable influence, after all, is merely an exciting, and not the originating, cause of typhoid fever. 'It only co-operates with certain other auxiliary conditions which are favourable to the spread of the disease, but none nor all of these can in any true sense originate it.' No subject has been more keenly discussed in recent times than the question of the causation of typhoid fever, with the practical outcome that it is considered an eminently preventible disease.

"The members of the Central Board of Health of Victoria do not pretend to advance anything new in theory or pathology. They are content to accept the doctrines promulgated by some of the best minds of the medical profession in Europe and America, which Budd very succinctly summed up in the words, 'Contagion is the master-fact of its history'; and they proceed to explain and illustrate in what particular sense and through what instrumentality the contagium may exert its influence. As regards the extent to which the disease prevails in the colony, which can only be estimated approximately from the number of deaths, it appears that the mortality from typhoid fever in the colony last year was 522, the whole population being a very little over 1,000,000; and the mortality for the half-year, from January to June inclusive, for the present year amounts to 281 deaths in Melbourne and its suburbs alone. Dr.

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It is good for all sorts of Pains, Swellings, and Bruises occasioned by Falls, or otherwise, and will prevent the many bad consequences of such Accidents.
For a Cancer before it is broke, and for all sorts of Sore Breasts, particularly in a Lying-In.
For Stiff Necks and for Swellings occasioned by the Evil.
For a Gangrene, melting a little in a wound, without using a tent.
For Pains in the Stomach, rubbed in before the fire.
If a little be well rubbed in for a few minutes on a Bruise or Pinch, it will prevent Blackness. Will also cure Scalds and Burns, applied directly; and Rheumatic and Gouty Pains fixed in any part.
N.B.—No woollen of any kind should be applied to the parts affected, nor any metal (except silver) touch the Pommade. It will retain its virtues many years, and is therefore very useful to all Travellers, particularly Gentlemen of the Army and Navy.

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As highly useful family medicines for that most distressing of complaints, Hæmorrhoids (or Piles), Bayley's Remedies have long enjoyed a high reputation. These remedies consist of specially prepared Pyrmont Tablets for invalid use, and of a Pyrmont Liniment for outward application. The tablets are compounded on the principle of the famous Pyrmont waters, which have been so highly recommended in cases of liver complaints, to the presence of which piles are often due, as well as in cases of the latter ailment itself. The liniment is made on allied principles. From an examination of these tablets and of the liniment, we are able to assert that they contain nothing calculated to produce untoward effects in the most delicate constitution, while they are likely to prove most beneficial in mild and severe cases alike. The ease with which the remedy may be taken—the tablets being agreeable to taste, and being merely allowed to dissolve in the mouth—will recommend this preparation in the eyes of those especially who have run the gamut of the many drugs employed for the cure of hæmorrhoids. We recommend a trial of Messrs. Bayley's Tablets, &c., which are to be obtained at 17, Cockspur-street, London, W.—*Vide* HEALTH, *April 8th*, 1887.

Prepared by BAYLEY & COMPY., Perfumers,

THE OLD CIVET CAT, 17, COCKSPUR-STREET, LONDON.

PRICE LISTS FREE ON APPLICATION.

Jamieson, contrasting Melbourne and its suburbs with the chief towns of England, shows that in 1879 the mortality from fever in twenty of the principal towns, including London, was at the rate of 2·9 per 10,000 of the population; whereas in Melbourne and its suburbs, on the average for ten years, it was at the rate of 7·3 per 10,000.

"The Central Board calculates that on an average 3,133 persons suffer from typhoid fever in Victoria every year, and that 470 of the cases end fatally; hence they are justified in sarcastically adding the remark that the disease has been very appropriately called 'colonial fever.' The Central Board then points out what are the 'preventible causes,' and how they can be 'prevented.' They first speak of the general apathy and ignorance that exist in regard to the subject, and under the head of 'insanitary conditions' they enumerate various details with which our own experience in this country has rendered us familiar—such as improper disposal of night-soil, contamination of water, milk infection, inaction of local boards, inadequate remuneration and inefficient action of local health officers, badly constructed dwelling-houses, and want of compulsory notification and power of isolation of contagious diseases. The members of the Central Board of Health wind up their sound and practical report by putting a few points prominently in the foreground as necessary to the effectual suppression of typhoid fever: compulsory notification, isolation, prompt removal by special service, destruction of typhoid excreta, general cleanliness, speedy abatement of nuisances, cleansing drains, abolishing cesspits, and protecting water-supply."

MEDICAL ELECTRICITY.—We are glad to be able to announce that a want that has long been felt by a considerable portion of the suffering community, and which has often led them into the hands of unscrupulous and ignorant quacks, is about to be legitimately satisfied. An "Institute of Medical Electricity" is in process of formation, supported by several eminent Medical, Electrical and Scientific men, and having the following objects: 1. To provide an Institute where, or in connection with which, people of small and limited means may obtain Electrical Treatment (under the direction of qualified medical men) for the cure and relief of diseases, at moderate fees. 2. To enourage, by scientific investigation and other approved means, the development of the science of Medical Electricity. 3. To provide a means by which medical men can obtain the use of reliable electrical apparatus and instruments for the treatment of their patients either at the Institute or elsewhere. We have on more than one occasion called attention to the questionable conduct of certain self-styled "Medical Electricians" and the utter uselessness of their much vaunted appliances—consisting usually of pieces of flannel with metal discs sewn therein, and our esteemed contemporary, the *Electrical Review*, has now taken up the same line. It is evidently high time that those among us who suffer from one or other of the numerous forms of nervous disease now so rampant, and are not able to pay the high fees of the specialist, should have some such establishment as the "Institute" to go to, where they can feel sure of receiving legitimate and scientific treatment at moderate cost, instead of being almost driven as at present to patronise the unprincipled quacks above alluded to. We shall hail the advent of the "Institute of Medical Electricity" with satisfaction, and feel sure that if properly managed, a brilliant future awaits it.

Jottings from the Journals

"Th' ingredients of health and long life are
Great temperance, open air,
Easy labour, little care."—*Sir Philip Sydney.*

Drinks for the Voice.—Tea, coffee, and cocoa are three admissible drinks, but none in excess. For the voice cocoa is the most beneficial. It should never be made too strong, and those cocoas are the best that have been deprived of their oil. A cup of thin cocoa, just warm, is more to be recommended between the exertions of singing than any alcoholic beverage. Tea must not be taken too strong, nor when it has drawn too long, for tea then becomes acid and has a bad influence upon the mucous membrane that lines the throat. There is always a dry sensation after having taken a cup of tea that has been allowed to draw too long. A vocalist had better do without sugar in tea and only take milk with it.

✣ ✣ ✣

The Preserving of Plums.—It may be worth while at this time of year to call attention to a simple and easy way of keeping damsons from season to season. Into a clean and dry forty-ounce, stoppered, wide-mouthed bottle pour half a drachm of chloroform, then pack in a pound and a half of the sound fruit, and introduce the stopper, slightly vaselined. It is desirable to tie in the stopper with twine, as it is sometimes blown out during warm weather. For a week or two the fruit retains its natural appearance, then drops begin to exude from the surface, which gradually collect into a perfectly clear, richly coloured liquid, partially filling the bottle. The fruit at the same time shrinks a little. In this condition it may be preserved without further change for at least a year, and probably for much longer periods. When eaten raw, the damsons have a slight, but by no means disagreeable, flavour of chloroform, and would be a pleasant addition to the dessert-table, to be partaken of sparingly, like brandied cherries. On cooking, the chloroform entirely disappears, and the flavour is that of the fresh fruit. The quantities given above are those which have yielded a successful result, and I do not think that a less proportion of chloroform would suffice to keep the fruit. The quantity in each vessel might, of course, be determined by convenience, and is only limited by the difficulty of getting large bottles with perfectly fitting stoppers. The experiment was, of course, suggested by the well-known inhibitive action of chloroform on the functions of microbes, and several other plans were tried, such as the use of chloroform water in which to keep the plums, and of corked vessels, vaselined over, where the chloroform alone was used. Success, however, was only met with under the above given conditions, though no doubt others might be devised which would have the requisite effect of keeping in the chloroform vapour, and thus paralyzing the yeast cells and septic organisms. Probably other fruits and provisions might be preserved in the same way, though in the case of animal food the solvent action of the chloroform upon fats might interfere. The great advantage of chloroform over salicylic acid and other fixed antiseptics is that it is got rid of in the act of cooking.—*Pharmaceutical Journal.*

"How can I get rid of this dyspepsia?" said an Austin invalid to his physician. "Have you tried prepared chalk?" "Yes; I've been getting my milk from a milkman for the last six years. The doctor says that's what gave me the dyspepsia."

Our Bookshelf

"Reading maketh a full man."—*Bacon.*

ANIMAL MAGNETISM.

Animal Magnetism. By ALFRED BINET and CHARLES FÉRÉ. (London: Kegan Paul, Trench & Co. 1887.) (International Scientific Series.)

THE number of persons who are interested in the phenomena of animal magnetism and "mesmerism," increases year by year. As education spreads, we are bound to find an increased number of the public who, unsatisfied with the displays of the entertainment-hall, insist upon an accurate knowledge of the bye-ways of the brain and nervous system. The present work is likely to become a popular one in view of the above named demand for popular literature, and those who carefully peruse its pages may feel assured that their study of animal magnetism will be rendered infinitely clearer than before. The Salpêtrière Hospital of Paris is noted as the fount and origin of nearly all important studies in the curious workings of the brain, and it is therefore interesting to note that the work before us was written "in the environment" of that famous medical charity. M. Charcot's influence is perceptible throughout its pages, since this distinguished physician was one of the first to place the details of mesmerism on a sound basis of physiology. There is a veritable wealth of illustration and of exposition contained in the pages of this volume; and we can assure our readers of the certainty of deriving a high intellectual treat from its perusal. The closing chapter on "Hypnotism and Responsibility" is a suggestive one, dealing as it does with the legal and social questions which arise in connection with the acts of mesmerized persons. We cordially commend the work to the notice of our readers.

A BOOK ON EASY DYING.

Euthanasia; or Medical Treatment in Aid of an Easy Death. By WILLIAM MUNK, M.D., F.S.A., &c. (London: Longmans & Co. 1887.)

"EUTHANASIA" was the term by which the ancients indicated the easy and painless end of life. Dr. Munk, the accomplished author of this little volume, deals with this absorbing topic from a medical point of view. When the active resources of medical aid have been exhausted, and when the patient is about to pass away into "the shadow of the dark valley," the physician may still have a part to play in easing the dissolution and in preventing undue pain in the dying. It is, on the whole, a mistake to paint death as the king of terrors—at least, in a physical sense. As Dr. Munk shows, and as medical science proves, the act of dying, as a rule, is not a painful process. Persons rescued from the very jaws of death have assured us of the painless nature of their feelings; and save in cases of a violent end, it is more than probable that actual death is as painless and unconscious an event as birth itself. In this volume the modes of death by failure of heart, lungs, and brain are duly discussed, and many valuable hints are given to nurses and others in the treatment of the moribund patient. The work teems with learning and research, and a warm word of praise must be awarded to the printing, binding, and general style of Dr. Munk's attractive little volume.

EXPERIMENTAL SCIENCE.

Mechanics and Experimental Science, as required for the Matriculation Examination of the University of London. By EDWARD AVELING, D.Sc., &c. (London: Chapman & Hall. 1888.)

THIS volume is certain to prove a welcome one to students who are preparing for the examination for which it professes to prove a guide. We have examined it carefully, and are enabled to testify to the care with which it has been written. The details are carefully explained, so that a student, reading privately, may be enabled to master the facts of which the author treats. A very useful set of exercises (and answers) adds to the value of the book as an educational manual.

MINOR NOTICES.

The Insurance Year Book for 1888 (Simpkin, Marshall & Co.) is a guide for persons effecting insurances. In this light, it gives full details respecting the various offices, and contains besides a large amount of valuable information respecting the standing of the companies which insure against accidents and fatalities both by land and sea.

Biliousness; its Causes and Rational Treatment. By ADOLPHUS E. BRIDGER, M.D., &c. (London: Henry Renshaw, 356, Strand, W.C.) (3rd Thousand.)

IF, as is popularly believed, "biliousness" is one of the most frequent of the ills to which flesh is heir, Dr. Bridger's book should attain a high popularity. From the innate merits of this work, we may assume that it will command a large sale. The author writes for the public, and there are no details included in this pamphlet

INTERESTING ARTICLES.

SETS of the BACK NUMBERS of "HEALTH," containing completed Serial Articles on various important Health Topics, may be had on remitting cost of the numbers and stamps for postage. The following subjects are treated:—

SHALL I SMOKE? In No. 231.
IS SNUFF-TAKING UNHEALTHY? In No. 218.
SOME HINTS FOR THE CURE OF FATNESS. In Nos. 213, 225.
PALPITATION AND ITS TREATMENT. In No. 216.
SCARLET FEVER. In Nos. 220, 230, 232.
DRESS AND UNDRESS. In Nos. 216, 217.
NURSING. In Nos. 208, 209, 210, 211, 212, 213, 214, 215, 216, 217, 218, 219.
HATS AS A CAUSE OF BALDNESS. In No. 215.
HOUSE CONSTRUCTION IN RELATION TO HEALTH. In Nos. 208, 210, 212, 214, 216, 218, 220, 222, 224, 226, 228, 230, 232, 234.
HEALTHY HOLIDAYS. In Nos. 223, 224, 225, 226, 227, 229, 230.
SLEEP WALKING. In Nos. 72, 73, 74, 75, 77, 79, 80.
INFANTS. In Nos. 100, 101, 102, 103, 104, 105, 106, 107.
PHYSICAL TRAINING FOR CHILDREN. In Nos. 94, 95, 96, 97, 98, 118, 119, 120, 121, 122, 123.
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WHAT TO DO WHEN FEVER INVADES THE HOUSE. In Nos. 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11.
THE HAIR, SKIN, AND TEETH. In Nos. 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14.
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HYDROPHOBIA: ITS NATURE, CAUSES, AND TREATMENT. In Nos. 20, 21, 23, 24, 25, 26.
CALISTHENICS. In Nos. 44, 45, 46, 47, 48, 49, 51, 52, 54, 59, 61, 62.
ECONOMICAL MEALS. In Nos. 48, 49, 50, 51, 52, 53, 54, 55, 56.
PUBLIC PARKS AND OPEN SPACES. In Nos. 57, 58, 60, 62, 64, 66, 71, 74, 76.

The price of numbers 1–156 has been increased to 4d. each, as, in consequence of the great demand for them, they are now nearly out of print. Nos. 157 to date may be had, price 2d. each.

LONDON: A. P. WATT, 2, PATERNOSTER-SQUARE, E.C.

which cannot be mastered by the intelligent lay reader. The real value of such a carefully written book as that before us is that it incites people to take an intelligent interest in their own ailment, and effects this desirable end by conveying accurate scientific ideas regarding the causes and treatment of the ailment whereof it treats. Such a method of dealing with medical topics is the surest preventive of quackery; although, of course, there will always exist those grandmotherly persons (chiefly representing medical "protectionists" of the most rampant type) who regard all attempts to instruct the public in health-matters as savouring of interference with their trade. Dr. Bridger, we are glad to note, has no fear of such professional "old women," whose style of talking and writing of the labours of others savours of the idea that the whole art of healing is their own special and exclusive property. We advise all "bilious" subjects to procure this pamphlet, which is sold at the moderate price of one shilling.

Messrs. Cassell & Co. send us *Little Folks* for January, an enlarged issue of an admirable magazine for children. Their *Illustrated History of England* and *Countries of the World* continue to represent the serial issue of two educative works of high class character.

Harper's Monthly Magazine for January (Sampson Low & Co.) contains a pathetic story, "Virginia of Virginia," which should be widely read, while William Black's novel, "In Far Lochaber," begins its career in this issue. An article on "Modern French Sculpture" should also attract attention from the excellence of its illustrations.

The Century Magazine (T. Fisher Unwin) for January will be read with interest, if only for its article on Mr. Ruskin. An admirable portrait of Ruskin forms a frontispiece to the number. Mark Twain has an amusing study in this number, named "Meisterschaft," while a negro story "De Valley an' de Shadder," constitutes a powerfully-written piece of fiction.

BOBBY was inspecting the new baby for the first time, and his dictum was as follows: "I s'pose it's nice enough what there was of it," he said without enthusiasm, "but I'm sorry it ain't a parrot."

SULPHUROUS FUMIGATIONS.—The Havre Congress of Hygiene have agreed to publish a set of directions for disinfecting, for the benefit of doctors or masters of infected vessels. Brimstone, broken up in small pieces, should be placed in broad and shallow earthenware or cast-iron dishes, of about one litre capacity. The vessels should be of one piece, without solder, and, as a precaution against fire, should be placed in tubs holding two or three inches of water. To light the brimstone, either sprinkle it with a little alcohol or tip it with a little cotton wadding dipped in the same liquid. For each cubic meter of room, thirty grammes of sulphur are requisite, or about one ounce for each forty cubic feet, all the openings being kept tightly closed for twenty-four hours. How to proceed when a large space is to be disinfected, and how to open the doors after fumigating, are described in detail, but one of the characteristic cautions given by the wise men at Havre is to avoid as much as possible, on board steamers, to let sulphur fumes get into the engine-room—not that serious harm is to be apprehended, but because the vapours turn polished brass and steel an ugly red colour, which greatly displeases the engineers.

Sanitary Appliances, Etc.

THE LAIRITZ PINE WOOL PRODUCTS.

MESSRS. LAIRITZ (whose agents are Welch, Margetson & Co., 16, Cheapside, London, E.C.) manufacture Pine Wool garments for underwear, "combinations," socks, stockings, knee-warmers, abdominal supporters, chest scarves, &c. These articles are not only a complete protection against taking cold, as well as excellent articles of wearing apparel, strongly and thoroughly made, but are likewise, and more especially, a directly curative agency (containing as they do some ten per cent. of the most healing essences of pine and fir needles) in gout and rheumatic troubles. To their healing properties, their wonderful success for more than a generation testifies. The Pine Wool Wadding, the Oil, and the Extract (for the bath) have proved remarkably efficacious, acting in the most direct manner, and with unexcelled success, even in chronic cases of gout, rheumatism, and kindred disorders of long standing. These Lairitz's Pure Wool Products are, therefore, daily becoming more widely known and appreciated, not only in Continental Europe, but in England also. The products have taken prizes in 14 Exhibitions, the last being in London (1883) and Liverpool (1886). They are scientifically tested and prescribed by physicians, the effects of the pine wool principles being matter of medical observation. Those of the readers of HEALTH who suffer from rheumatic troubles may be advised to read the descriptive pamphlet which may be had from Messrs. Welch, Margetson & Co., as above stated.

BAYLEY'S DENTAL PREPARATIONS.

MESSRS. BAYLEY & CO., 17, Cockspur-street, Pall-Mall, London, S.W., have forwarded to us specimens of their "Essence of Pearl" and of their "Pearl Dentifrice,"—two substances evidently calculated to prove of value in maintaining the health of the teeth. These preparations were first made by the late Jacob Hemet, Dentist to the Royal Family, and the result of his long experience is embodied in the Dentifrice and Tooth-Wash under review. Both substances are singularly pure and agreeable to use, and the value of the preparations is enhanced by the very admirable series of directions for the care of the teeth and gums which accompanies each packet and bottle. For the cure of spongy gums, the Essence of Pearl may be highly commended, and its use is calculated also to relieve toothache, and to prevent tooth decay. These are elegant toilet preparations, whose fame during the last century is fully maintained to-day.

Our Letter-Box

"Conference [maketh] a ready man."—*Bacon.*

NOTICES TO CORRESPONDENTS.

All Communications for the Editorial Department (including Books for Review, Specimens of Sanitary Appliances, &c.), to be addressed to "THE EDITOR OF HEALTH," 2, PATERNOSTER-SQUARE, LONDON, E.C. *Those intended for the Publishing Office to be sent to* MR. A. P. WATT, THE PUBLISHER, *at the same address.*

RULES FOR CORRESPONDENTS.

OWING to the mass of letters which reaches us each week, we respectfully direct the attention of Correspondents, desiring replies in the LETTER-BOX DEPARTMENT of HEALTH, to the following rules:—

1. All questions are answered free of charge in the columns of HEALTH.
2. All letters must be legibly addressed to "The Editor of HEALTH, 2, Paternoster-square, London, E.C.," *and to no other address.*
3. Questions to which answers are desired by post, are so replied to solely at the Editor's discretion. If no answer is sent by post, the query will be replied to in the "Letter-Box" columns of HEALTH. A stamped addressed envelope must accompany all queries to which a private reply is desired.
4. Addresses of physicians and surgeons will, as heretofore, be forwarded FREE to Correspondents on their enclosing a stamped addressed envelope for reply.

5. Correspondents are requested to write on one side of the paper only, and to make their inquiries as brief as may be consistent with clearness.

6. From the necessity of sending HEALTH to press early in the week, no Correspondent can be replied to in the "Letter-Box" columns in the same week in which the inquiry is received. Replies crushed out of any issue will be found in the succeeding number.

7. No Post Cards must be used in sending queries. Violation of this rule deprives the sender of the privilege of a reply.

QUERIES AND ANSWERS.

REPLIES: GENERAL, SANITARY, AND MEDICAL.

A. PORTER.—Try a vegetable dietary—stewed fruits, apples or oranges, &c., and whole-meal bread, with Grant's Oat Flour for supper and breakfast; avoid tea and coffee; take Cascara Cordial, twenty drops in water, between meals, once or twice daily. Sponge with cold water each morning; sleep on a hard mattress; take plenty of open-air exercise, and avoid fluids and suppers late at night.

WEAK BROTHER.—Write to Mr. Pulvermacher, 194, Regent-street, London, W., for prospectus of his Galvanic Belts, and give one of these excellent appliances a full and careful trial. We have known these belts act very successfully in cases like yours. Continue to take the tonic named twice daily after your meals.

O. M.—Take a little Æsculap Water each morning for a time, and if the constipation continues, make your diet to include farinaceous materials, *e.g.*, Scott's Oat Flour and stewed fruits. Rest after your meals.

G. A. F.—Sit and rest with your feet elevated, so as to favour the return of the blood in the veins. Have the foot of your bed also elevated. Avoid constipation above all else, as this is a frequent cause of varicose veins, as also is long standing in business. You should get a surgeon to show you how the elastic bandage (see that you use one of Dr. Martin's, to be had from Krohne & Sesemann) is to be applied, as much depends on the exact fashion in which the bandage is used.

B. B.—Read the pamphlet, "A Lecture to Young Men" (post free for 1s. 1d. from Mr. Renshaw, 356, Strand, London, W.C.), and attend to the directions there given as to tonics and cold sponging each morning. These directions will restore you completely if you will persevere.

C. B.—Try Woodward's Gripe Water. It is perfectly safe, and will relieve the child's pain.

AMERICAINE.—Take a pill containing one grain permanganate of potash, to be made up with Kaolin. Take two of these pills twice daily, after your food, before the period, and let us hear the result after a brief trial of this remedy.

MARSTON MOOR.—Try the effect of taking the following pill: Powdered ipecacuanha, half a grain; powdered capsicum, one grain; powdered rhubarb, two grains; extract of gentian, three grains. Six such pills to be made, and one to be taken half an hour before dinner when there is any liver irritation.

COUGHER.—Inhale, at bedtime, the vapour of a pint of hot water to which a teaspoonful of Friar's Balsam has been added. After your meals, take a dessertspoonful of Scott's Cod Oil Emulsion with Hypophosphites, thrice daily, as a general strengthening measure. If you have sufficient reaction, cold sponging to the chest will also be found useful each morning.

A. M.—Use a belladonna suppository containing a quarter-grain of belladonna at night. Internally, take twenty grains bromide of potash in water twice daily, between meals, so long as your symptoms last.

RICHARD QUARE.—As an abstainer you will find Bingley's Ginger Ale the most excellent beverage for dinner. It is much superior in every way to the ordinary "ales" and like beverages, and is stimulating to digestion, without being in any way injurious thereto.

ANDY FULLAGAR.—Wash the parts with Iodoform Soap and tepid water regularly, and apply a little Lanoline to the parts at night. Wear gloves continually for some time. If a lotion is needed, try applying to the parts one composed of one part of Hazeline to two parts of water. This has often a wonderful effect in promoting healing.

BALD ONE.—Try the effect of the following as a nutritive hair application, and brush the hair night and morning thoroughly with a pair of very soft brushes; use no hard brushes or combs: Castor oil, four drachms; almond oil, twenty-eight drachms; glycerine, twelve drachms; rectified spirits, four drachms; Jockey Club perfume, eight drachms. Mix. Label: "Rub a little into the roots of the hair each morning." If not bettered, write again.

T. LOBB.—Try Twyford's National or Unitas, which is made in one piece, and easily cleansed. If you obtain such a closet-pan, there will be no need of any powders for removing smell provided your flushing arrangements are sufficient.

P. HAY.—Take the following tonic: Citrate of iron and ammonia, one drachm; syrup of orange-peel, half an ounce; water, eight ounces. Mix. Label: "Two tablespoonfuls to be taken thrice daily, before food."

A. L.—Apply a little black wash on cotton wool to the parts, keeping the cotton wool always moist. Internally, take a dose of Lamplough's Pyretic Saline occasionally.

LEGAL.—Try the effect of taking twenty drops of Cascara Cordial in water an hour before your breakfast, and repeat the dose, if necessary, in the afternoon. This will remove the constipation. As to diet, give up tea and coffee, and for breakfast and supper substitute Grant's Oat Flour. For the rest, let your diet be light. Take as much open-air exercise as possible.

TABBY FOX.—The disease you name is epilepsy. In its true nature this is a disease of the nervous centres. You cannot treat the child yourself. See a physician at once.

JOSEPH COOPER.—Try the ointment recommended to "Lorna" in HEALTH, No. 247. Simply attend to the child's diet carefully, and see that all constipation is avoided. (No stamped addressed envelope was enclosed in your letter.)

T. A. ALBRECHT.—Such ailments are not at all unusual in children as the result of teething; they can only be treated satisfactorily after seeing the child. As regards this, and the other case you name, we advise you to take the opinion (especially for future guidance) of a specialist in children's diseases. Send us stamped addressed envelope, and we will forward you name of a reliable physician. Purchase the little book on "Infancy and its Treatment," by Miss Jex Blake (Macmillan & Co.), as a useful family manual. Many thanks for your good wishes, which are heartily reciprocated.

NERVOUS EXHAUSTION.

PULVERMACHER'S World-Famed GALVANIC BELTS for the Cure of NERVOUS EXHAUSTION and DEBILITY, have received testimonials from three Physicians to Her Majesty the Queen, and over Forty Members of the Royal College of Physicians of London.

The distressing symptoms of NERVOUS EXHAUSTION and DEBILITY are speedily removed by means of **PULVERMACHER'S world-famed Galvanic Belts,** which are so arranged as to convey a powerful electric current direct to the affected parts, gradually stimulating and strengthening all the nerves and muscles, and speedily arresting all symptoms of waste and decay.

Dr. VINES, Fellow of the Royal College of Physicians, writes 19th September, 1885: "Having used MR. PULVERMACHER'S BELTS for many years, in the course of medical practice, I am in a position to speak of their great value as a curative agent in cases of nervous disease or functional malady where Electricity is likely to be serviceable. I am entirely convinced of their efficacy."

Dr. C. HANDFIELD JONES, F.R.C.P., F.R.S., Physician to St. Mary's Hospital, says: "I am satisfied that MR. PULVERMACHER is an honest and earnest labourer in the field of science, and I think he deserves to meet with every encouragement from the profession and scientific men."

Dr. GOLDING BIRD, M.D., Physician, Guy's Hospital, says: "I can hardly recommend MR. PULVERMACHER'S INVENTION too strongly to the notice of my medical brethren."

For full Price List and particulars, see New Pamphlet, "**GALVANISM: Nature's Chief Restorer of Impaired Vital Energy.**" Post Free from

PULVERMACHER'S
GALVANIC ESTABLISHMENT,
194, Regent-street, LONDON, W.

RICHARD II.—Take more open-air exercise, and use a rough towel to your face after washing. Use Bayley's Spermaceti Soap only, and if blackheads are present press them out, and sponge the parts thereafter with Bayley's Lavender Water (17, Cockspur-street, Pall Mall, London, S.W.). Read the pamphlet "A Lecture to Young Men" (post free, 1s. 1d., from Mr. Renshaw, 356, Strand, London, W.C.) and also the article in HEALTH, No. 199, on the cure of acne.

G. F. H.—Try the Lanoline Pomade by all means (Burroughs, Wellcome & Co.'s—order of your druggist); and if not cured write again. Keep the hair very short.

EDINA.—We should recommend you rather to use for colds the treatment recommended to "Cougher" in the present number of HEALTH. The drugs you name are useful but uncertain of action, and require besides to be very skilfully used. Smoking one or two of Marshall's Cubeb Cigarettes (to be had of any druggist), and bringing the smoke down the nostrils, is very useful for cold in the head, especially if you employ this remedy at an early stage; and thirty grains bromide of potash, taken at bedtime, will often assist your cure, if you do not expose yourself to risk of fresh cold.

C. J.—Try the remedies recommended to "Frank M. P." in HEALTH No. 247.

ANXIOUS.—You should avoid beer and other stimulants. Take Æsculap water regularly each morning, and exercise great simplicity in your diet. Rest after your meals, and take five drops of Pure Terebene on a piece of sugar when the pain troubles you. If not bettered, write again.

A. R. G. H. B.—Use for your hair each morning a preparation made of glycerine, two ounces; tincture of myrrh, one ounce; eau de Cologne, one ounce; tincture of cantharides, half an ounce; and distilled water, twenty-four ounces. For the rest, see instructions given to "R. F." in HEALTH, No. 248.

SPERO.—1 and 2. Apply a little of Borthwick's Winter Cream to your lips—see advertisement in our pages. 3. Rest after your food, and take five drops of Pure Terebene on a piece of sugar after meals.

J. M. P.—Read the pamphlet, "A Lecture to Young Men" (post free for 1s. 1d. from Mr. Renshaw, 356, Strand, London, W.C.), and note its advice as regards diet and tonics.

AROMA.—Your question is a difficult one to answer. We can scarcely advise you in the matter, as the conditions are so complex. Our advice, however, is to try tonics and to restore your general health thoroughly, in the hope that such general remedial measures may have a local effect. The only other course would be for you to consult a specialist in diseases of the nose. We can send you address of such, if desired, on receipt of stamped addressed envelope.

POOLER TWYNANE.—Probably your present state of life has a good deal to do with your symptoms. Try the effect of taking twenty grains bromide of potash in water when you are troubled.

B. P. G.—1. Try Dahl's Cakes as a remedy for constipation—see advertisement in our pages. 2. Bokö̈l is the best beverage to use with your meals.

CATHERINE R.—Woodward's Gripe Water may be safely used for your child. It contains no opium.

NIP.—1. We do not know the firm you name. 2. A so-called "electric" belt, which consists of flannel or other material with metal discs sewn therein, but with no other appliance for generating electricity, is a swindle and a fraud.

B. VANSITTART.—You should stop all tobacco till you are well. Tobacco is a powerful sedative in such a case as yours, and you will be well advised to give it up. Beer is also injurious; far better try Bokö̈l to dinner. You must be patient, of course, for such cases are often tedious, although not in any sense incurable. If the tonic you are taking now does not do good, replace it by taking a claret glass of Vin Mariani (Roberts & Co., chemists, New Bond Street, London, W.) after meals twice daily. You must not mix up tonics. If these remedies fail, you should try a Pulvermacher's Belt; indeed that appliance might well be used by you now, as it has a high reputation in such cases. If we can aid you again, write us later on.

LEADS.—Take fifteen drops Fer Bravais in water after your meals, thrice daily; avoid beer and all stimulants; continue the Vichy Water; and avoid much flesh food. Take vegetables in plenty; and let us hear the result of this treatment. Avoid pastry, salt foods, and cheese. A Vichy Pastille will cure heartburn readily.

CORDELIA.—1. Rest after your meals, and avoid indigestible foods. A teaspoonful of Thomson's Cod Liver Oil Cream taken after meals will assist your cure. For the hands use Lanoline as an application. 2. Try a vegetable diet, drink Vichy Water regularly, avoid stimulants, take plenty of open-air exercise, and clothe warmly all winter in Messrs. Ward's (Bradford) woollen underclothing. 3. Apply to Messrs. Lindsey & Co., Ludgate Hill, for any kind of supporting belt. They will send you directions for self-measurement and a descriptive catalogue if you apply to them.

HAIR.—Wash your head once a week with tepid water and Bayley's Spermaceti Soap (17, Cockspur-street, Pall Mall, London, S.W.), and rub into the hair roots each morning a little glycerine of borax. Avoid all hard brushes and small combs. Thereafter use a little brilliantine as a hair-dressing.

A SEA CAPTAIN'S ESCAPE FROM DEATH.

ON those who follow the sea, Nature has generally been kind enough to bestow a rugged constitution, capable of resisting all debilitating effects of the many varieties of climate they meet, the exposure, and the terrific storms and hardships incident to their career. But those "who go down to the sea in ships" are only human, and if the elements are unable to make the hardy mariner wince, Time, that sure harbinger of fate, will eventually find some weak point in his armour through which to thrust a lance. Tales of their life have been woven in song and story, fo'c'sle yarns have fired the heart of many a boy, and even made the pulse of old men beat faster. There is, and always will be, a halo of romance surrounding the lives of those who have kissed the sea-maiden and have been wedded to her bosom; no lover is more true, and no knight ever battled more sturdily and bravely than the sailor in defence of his love. The following true story, vouched for by many prominent people, speaks for itself, and we commend it to our readers as being of great interest, and one which carries its own moral: "Ever since a child I have lived on the water, rising from cabin-boy to captain. I visited nearly every part of the globe, having no ill-health for more than twenty years, but when trouble came upon me it attacked me in the shape of sharp, acute, knife-like pains in the right side, and at times so severe that I would involuntarily fall on the deck, and was obliged to be carried below. This was accompanied with neuralgic pains, and eventually my hands became partially paralysed. At last, in 1873, I was obliged to leave my ship in Oregon, and return home to Nova Scotia. Here I could get only temporary relief, the doctors saying I had muscular rheumatism. I first saw one medical man, and then another, each one giving it a different name. During two years of this I was getting slowly worse, and then came to England. At this time I was suffering intensely with my urinary organs, passing blood, was much irritated and depressed, toes stiff and painful, ankles swollen, and unable to lift my feet more than a few inches from the ground. I had an excessive thirst, and drank large quantities of water. I consulted prominent medical men in Edinburgh and Glasgow, who gave me a little relief, but I soon found myself returning to my old condition, with the addition of intense pain in the back, my legs and feet more swollen than ever, so that I could not make use of them at all. At this time I consulted the physicians at the —— Hospital, who, on making an analysis of my water, said my case was hopeless, and they could do me no good. My life was one great misery, and death would have been a welcome release. My own physician informed my family that I might last a month, but there was no hope of recovery. While in this deplorable condition, my attention was called to a testimonial from a medical man who had been cured of a serious kidney disorder, and whose symptoms were nearly the same as mine, so that I was in hopes that, as this medicine restored him, it would at least ease my misery. I resolved to give it a trial, though I was confined to my bed, helpless, and could not move unaided. My son procured me a bottle of Warner's SAFE Cure, and I faithfully followed the directions as to taking it, and at the end of ten days was very much better, and by a month able to walk some distance. After taking it continuously for a few months, my health was completely restored, and to-day I feel better than a person of sixty-five years of age can expect to be. My stomach is restored, have not a pain nor ache; I eat well and sleep well, and I have dumbfounded all my friends by my recovery and cure. You cannot imagine my feelings of thankfulness when I speak of Warner's SAFE Cure, and I want the whole world to know of the benefit cases such as mine can derive from the medicine. If I had paid £10 a bottle it would have been cheap, as to it I owe my life. I recommend it far and near, and take pleasure at all times in letting people know its wonderful virtues."

(Signed) Captain J. PAIGE,
5, Southwell Grove-road, Leytonstone, Essex.

The remedy which cured Captain Paige can be procured of all chemists, or of H. H. Warner & Co., 86, Clerkenwell-road, London, E.C., at 4s. 6d. per bottle.

JAMES.—We advise you to consult the London physician we named. The affection is not one to be trifled with. 2. Local and constitutional treatment must be first tried. The physician we named would give you all information regarding climatic treatment.

SCOTT'S EMULSION

OF PURE COD LIVER OIL

AND HYPOPHOSPHITES

Is three times as efficacious as the plain Oil.

It is almost as palatable as milk.

It does not nauseate or produce a loathing for food like the plain oil.

The Hypophosphites and Oil are so skilfully combined, that they are much more potent in building up flesh and strength than if taken separately, and **SCOTT'S EMULSION** is to-day the best remedial agent for the cure of

CONSUMPTION, CHRONIC COUGHS, BRONCHITIS, ANÆMIA, WASTING DISEASES OF CHILDREN and GENERAL DEBILITY.

Physicians universally prescribe it in preference to the plain oil, having seen its remarkable curative effects.

Any chemist can supply it at 2/6 and 4/6.

CORPULENCY.—Let the child have more open-air exercise; her work is against her health; and give her ten drops of Fer Bravais, after food, in water, twice daily. Avoid giving much starchy food and sugar.

B. D. E.—We are afraid there is no "happy medium," such as you desire. You might look at the "Ladies' Physician," published by Cassell & Co. It is a well written book.

J. WELSH. — The ointment might be tried: say one part Iodoform to twenty parts of benzoated lard.

LORNA.—You are evidently in need of a tonic. Take more fresh air, and try a teaspoonful of Syrup of the Hypophosphites after your meals, twice daily, in a wineglass of water.

BONITO. — 1. Try Dahl's Cakes as a remedy for constipation. They are not drugs, but an admirable form of food and digestive aid combined. 2. Nearly thirty-two per cent. 3. Howie's Filter, certainly. 4. Try Mellins' Food, which is not farinaceous.

B. MAX.—1. See article on "Cremation" in the present issue. 2. The drug you name is Antipyrin. It is sold in tabloids made by Burroughs, Wellcome & Co., London, E.C.

C. PLAYER.—1. Benger's Food would suit the case you name. It is predigested. Use it according to the directions given with the Food. 2. Try tar ointment.

O. M. Y.—1. We can send you address of a London surgeon on receipt of stamped addressed envelope. 2. The technical name is "nævus."

UXBRIDGE.—We would suggest such a brand in the case you name as the Kepler Extract of Malt and Cod Oil combined; your druggist will procure this for you. The Fer Bravais could be given before food and the Cod Oil after meals. In such a case we should also suggest your using milk plentifully, predigested by Fairchild's Powders, and also Benger's Food (advertised in our pages), as easily assimilated forms of nutriment.

E. K. — You may be constitutionally small-built. Do you suppose that tallness constitutes the one essential for "the son of a gentleman"? You should continue the tonic you name at intervals only, for no drug should be taken continuously. It is probable also that a judicious course of gymnastic exercises might benefit you.

SCOTUS.—Yours is a case for persistent and watchful treatment by a physician. You should appreciate this fact and act upon it, and avoid doseing yourself with drugs. Even the matter of your diet, in an ailment such as that you have suffered from, should be supervised by your doctor. Be wise, and place yourself under his direct and constant supervision.

T. MURPHY.—Try touching the warts with a little tincture of iron perchloride night and morning.

WOOLDRIDGE'S TINCTURE

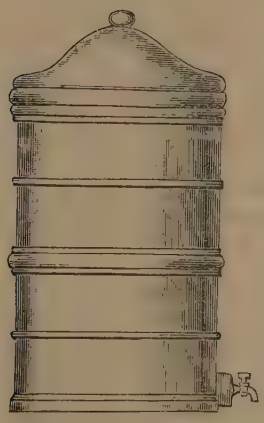
FOR

GOUT, RHEUMATISM AND NEURALGIA.

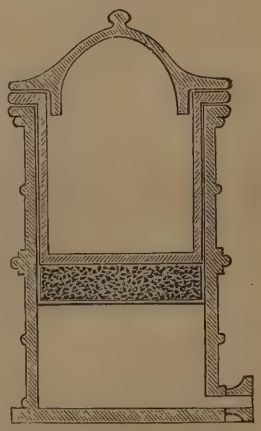
OF ALL CHEMISTS.

A Perfect Filter at last!

HOWIE'S PATENT WATER FILTER.



In this Filter the water percolates slowly through Porous Fire Clay, then through patent Porous Mineral Charcoal, and, finally, through Porous Clay, thus receiving Three Filtrations. This Filter can be cleaned in a few seconds by simply lifting out the Porous vessel, and brushing or washing off the impurities which collect on the surface. It is very simple, effective, easily managed, and cheaply maintained, and not liable to become a breeding-place for Bacteria or other germs, or a reservoir for *giving out* impurities to the water passing through it, as most Filters do after a few weeks' use.



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(The latter can be made capable of bearing a Temperature of 200 degrees),

Can all be supplied at very Moderate Prices by

J. & R. HOWIE,

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Or at 15, GARLICK-HILL, LONDON, E.C.

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PULLARS' DYE-WORKS, PERTH.

By Appointment to Her Majesty the Queen, 1852.

J. PULLAR & SONS intimate that in their Works there is every convenience and appliance for Cleaning and Dyeing in the best style the varied and expensive materials in use for Ladies' and Gentlemen's wear, as well as for Household purposes. They direct attention to the superiority of their workmanship, and to the regularity and speed with which articles are returned.

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Catalogue and any Information Post Free by return.

TO PRESERVE THE HAIR FROM DECAY, USE

"CLEOPATRA,"

THE HYGIENIC HAIR OIL.

As recommended by the Medical Profession. Will keep in all Climates. Price 2s. per bottle.

FOR PARTICULARS APPLY TO THE

FRENCH HYGIENIC SOCIETY,

56, CONDUIT-STREET, LONDON, W.

"Fer Bravais" The Best Tonic.

INVALUABLE FOR GENERAL WEAKNESS OR DEBILITY.

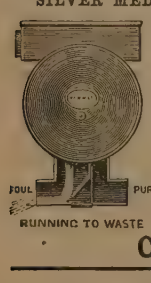
LANCET.—"*Colloid hydrate*" *of iron.* "*Neutral and tasteless solution.*" "*A beautiful and interesting preparation.*"

BRITISH MEDICAL JOURNAL.—"*A remarkably valuable preparation.*" "*Has all the good effects of iron without producing constipation or disturbing the digestion,*" *and* "*does not blacken the teeth.*" "*An eminent London Physician writes to us,* 'I HAVE TRIED IT EXTENSIVELY, AND HAVE GIVEN IT IN CASES IN WHICH NO OTHER FORM OF IRON COULD BE TAKEN. IT IS *the best preparation of iron* I HAVE MET WITH.'"

LONDON MEDICAL RECORD.—"*Tasteless, free from styptic character, a most energetic preparation—the beau ideal of a ferruginous tonic.*"

Sold by all the principal Chemists and Druggists, in Bottles in portable Card Cases, with Drop Measure complete, sufficient for six or three weeks' treatment. Prices, 4s. 6d. and 3s. per Bottle, respectively.

SILVER MEDAL, Health Exhibition, 1884, and Medal of Sanitary Institute, 1883.



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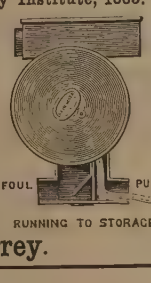
Prevents the first portion of the rainfall passing into the storing tank. It cants and stores the water when the roof has been washed by the rain.

PRICE FROM £2 5s. to £6 5s.



C. G. ROBERTS, Haslemere, Surrey.

ESTABLISHED 1825.

NEAVE'S FOOD

FOR INFANTS, INVALIDS, AND THE AGED.

BEST AND CHEAPEST.

MÖLLER'S COD LIVER OIL.

IS NOT AN EMULSION, AND DOES NOT, CONSEQUENTLY, CONTAIN THE 50 PER CENT., OR MORE OF WATER USUALLY CHARGED FOR AT THE PRICE OF OIL

PERFECTED IN ONE OPERATION! NO AFTER-MANIPULATIONS!

A WONDERFUL MEDICINE.

BEECHAM'S PILLS

ARE universally admitted to be worth a Guinea a Box for Bilious and Nervous Disorders, such as Wind and Pain in the Stomach, Sick Headache, Giddiness, Fullness and Swelling after Meals, Dizziness and Drowsiness, Cold Chills, Flushings of Heat, Loss of Appetite, Shortness of Breath, Costiveness, Scurvy and Blotches on the Skin, Disturbed Sleep, Frightful Dreams, and all Nervous and Trembling Sensations, &c. The first dose will give relief in twenty minutes.

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EDITED BY DR. ANDREW WILSON, F.R.S.E. &C.

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[The above letter, dated Sept., 1886, is from a medical gentleman in extensive practice in a large city in the North of Ireland.]

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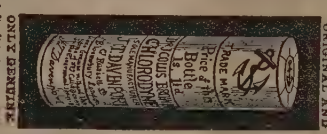

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◆ HEALTH ◆

EDITED BY

DR. ANDREW WILSON, F.R.S.E., &c.

LONDON: *FRIDAY, JANUARY* 6, 1888.

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Notes by the Way

BY THE EDITOR.

"Health is the foundation of all our physical happiness."—*Herder.*

WITH reference to the case of the "horned men" referred to in last week's HEALTH, the following quotation will be read with interest: "In the *Spitalul*, December, 1886, p. 487, Dr. V. Bejan, of the Botozani-Dorshoi Military and Rural Hospital, in Roumania, described the curious case of a woman named Casandra Morarn, aged 40, who came to him with a horn like a ram's growing from her left parietal (side of head) region. The horn was curved forwards, and nearly reached the corresponding frontal tuberosity. It measured eight centimètres in length (six centimètres along the direct line from its base to the end), two centimètres in breadth at the base, and one and a half centimètre at the apex, and was mobile, its base being surrounded by a boney plate, which gradually blended with the adjacent epithelial tissue of the integuments. According to the woman's statement, the horn began to grow at the age of eleven, and gradually developed to its present size. Dr. Bejan excised the horn, together with the basal plate. Under an iodoform dressing the wound healed in five days."

MORE "ways that are dark and tricks that are vain." A clerical correspondent, signing himself "Anti-Filth," writes me as follows: "I received a few days ago the enclosed pamphlet. It was sent in an envelope as a letter. As it appears to me to belong to a class of literature that you characterize in no very flattering terms at times, I thought I should like you to see it and express your opinion on it. I don't know why this gentleman should thus favour me, as I have never in my life applied to any of the fraternity for advice, never having had occasion to do so. I may be in error in my views of the matter; but I am rather disposed to regard the sending of this pamphlet to me as little short of an insult, considering its peculiar nature."

✣ ✣ ✣

THE pamphlet in question is the production of a "Dr. A. Bell," of "Volta House, 175, Wardour-street, London." Dr. Bell's name does not appear in the *Medical Register*. I have no hesitation in saying that the sending of such a pamphlet, either to a clergyman or to anyone else, is nothing short of an offence against the laws of decency. I have repeatedly protested against this quack-pamphlet nuisance, but respectable persons seem to be powerless to defend themselves from the flood of such literature, inasmuch as the law, as it stands, fails to make the offence of sending such literature by post criminal, as it should be made.

✣ ✣ ✣

IN connection with this subject, I may note that my contemporary *Truth* lately contained the following statement: "A gentleman writes from Edinburgh:—

"SIR,—The enclosed paper was sent to my mother two days ago, marked outside 'Strictly private,' and 'If not delivered in five days, please return to the Secretary, Room 8, 5, Hart-street, Bloomsbury, London, England.'

"She is an old lady of sixty-six, a widow, and, I am glad to say, in robust health. I believe you are fond of exposing the scoundrels who send these things. I must ask you to treat my name as *private*.

✣ ✣ ✣

"THE enclosure commences with the usual suggestions of a ruined constitution, and concludes as follows:—

"This wonderful remedy was discovered by a missionary during his travels in Old Mexico. Send a self-addressed, stamped envelope (enlosing two penny stamps to defray expenses) to Rev. Joseph Holmes, Bloomsbury-mansions, Bloomsbury-square, London, England, who will send the same, free from observation.

Who is the Reverend Joseph Holmes? If really a clergyman, his ecclesiastical superiors should take him in hand. But probably he is a quack, masquerading under the word 'Reverend.'"

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IN connection with the above observations the following report, culled recently from the *Scotsman*, shows a gratifying determination on the part of the Edinburgh authorities to put down this disgusting nuisance:—"Obscene Literature on the Streets.—A man named John Davies was yesterday, in the City Police Court of Edinburgh, fined by Bailie Cranston 10s., with the option of fourteen days' imprisonment, for handing out on the streets indecent books, the advertisements of a 'quack doctor.'" If it is an offence to distribute these circulars on the streets, it should equally be made an offence to send them broadcast by post.

✣ ✣ ✣

HERE is a nut for cigarette smokers to crack. The unusually large number of young men who have been committed to the State insane asylum of Michigan in the last year and a half, it is said, has led to the discovery that almost all of them smoked cigarettes to excess. In many cases it is said to be absolutely certain that cigarette smoking was the cause of the insanity. It is also reported that a prominent society young man in Detroit has been made deaf by cigarette smoking. Is there anything more than a coincidence after all in such facts? I should have imagined that if cigarette smoking produced such mental results, cigars and pipes would be infinitely more productive of insanity. Is the whole story not a mere *canard?*

✣ ✣ ✣

A CORRESPONDENT of a contemporary remarks that "books and papers may be effectually disinfected without injury by exposing them for a few hours to a regulated temperature of 220 degs. to 240 degs. Fahr., the books being so arranged as to separate the leaves and allow the heat to gain access to them. A dry and not a steam heat must be used for books, as steam destroys leather and loosens glue. Specially contrived apparatus for disinfecting by heat are provided by the local authorities in most large urban districts; but articles of small size and value, such as newspapers and letters (which, of course, must not be fastened with sealing-wax), may be disinfected by baking them for two or three hours in an ordinary kitchen oven." In view of the frequent dissemination of infectious disease through library and other books, the above hint may be worth noting.

✣ ✣ ✣

SOME curious statistics of the comparative consumption of fruit and vegetables in London and Paris, says a contemporary, have recently been published in the *Horticultural Times*. The annual average consumption a head of population is stated to be as follows, the greater quantity in each case being credited to the Parisian: Apples, 65lbs. 6oz., 145lbs.; pears, 39lbs. 5oz., 170lbs. 13oz.; peas, 3lbs. 8oz., 6lb. 15oz.; carrots, 7lbs. 3oz., 37lbs.; celery, 11oz., 6lb. 13oz.; cherries, 2lbs. 13oz., 20lbs. 14oz.; plums and damsons, 17lbs. 12oz., 183lbs. 4oz.; raspberries, 4oz., 2lbs.; strawberries, 3lbs. 10oz., 13lbs. 12oz.; asparagus, 1lb. 3oz., 5lbs. 4oz. On the other hand, while the Londoner eats 173lbs. 4oz. of potatoes, the Parisian eats only 49lbs. 4oz. The average consumption of onions, tomatoes, cabbages, cucumbers, and turnips is also greater in London than in Paris, but with these exceptions our neighbours are by far the largest consumers of fruit and vegetables. The figures afford additional evidence that, even allowing for climatic differences, the vegetarian diet of the average Englishman is neither so varied nor so extensive as it ought to be.

Original Essays

"Life is not to live, but to be well."—*Martial.*

THE LATEST DISCOVERIES ABOUT SCARLET FEVER.

BY M. D.

IN HEALTH, both recently and remotely, reference has been made to scarlet fever as a germ-produced disease. Stress was also laid upon the relation of this fever to milk, and especially to a disease affecting the teats of cows. In an article on this subject published in HEALTH for June 24th, 1887, the following remarks were made, and they are quoted by way of introducing the recent investigations of Professor Crookshank into the nature of this fell disorder.

"The outbreak of scarlet fever a year or two ago at Hendon, near London, had suggested a peculiar eruption appearing on the teats and udders of cows as providing the poison of the disease. Dr. Klein found germs associated with this eruption in the cow such as occur in the blood in the scarlet fever of man. His view, that the disease of the cow is really bovine scarlet fever, is supported by the facts that in condensed milk, suspected of being the cause of the disease, he also found the same germ or microbe, and that a monkey suffered from symptoms of the fever after partaking of milk from a suspected source.

"It may be interesting at this stage to give Dr. Klein's own words regarding his researches into the nature of scarlet fever. In his recent lecture at the Royal Institution, London, Dr. Klein said: 'I shall now give a striking piece of evidence well in harmony with what I have mentioned hitherto. In October, 1886, Prof. Corfield forwarded to me certain tins of condensed milk, sold under the name of "Rose brand." This milk was under suspicion of having produced scarlet fever in a number of persons that had partaken of it. From one out of three tins of this condensed milk, I have obtained by cultivation a microbe which, in every respect, morphologically and in cultures, is the same as the microbe obtained from the Hendon cows and from human scarlet fever. The action of the microbe of the condensed milk was also tested on animals, calves and mice, and it was found that it produced the identical disease that was produced by the microbe of human scarlet fever, and of the Hendon cows. I may add that this Rose brand of condensed milk is, like all condensed milk, obtained from cows' milk. The Rose brand is a cheap article, and meant for the poorer classes; probably it has not been sufficiently heated in the tins before sealing the latter; that this is so can be inferred from the fact that every tin of this brand which I opened contained some organisms. Thus, for instance, I find that one tin contained the scarlet fever microbe and another species of micrococcus; another tin contained a harmless species of micrococcus only; and a third tin opened contained a micrococcus and a species of bacillus.

"'Another piece of interesting evidence concerning the

JENSEN'S COD LIVER OIL is acknowledged as the best because it is the only Oil made from absolutely fresh Livers. It prevents all Coughs, Colds, Asthma, Bronchitis; it makes the Digestive Organs act, and is the only remedy of any value in cases of Consumption; it is sweet and pleasant—cannot by any possibility cause any aftertaste, while all its nourishing virtues are retained. Of all Chemists, &c., in bottles, each Wrapper bearing the Registered Trade Mark (an Iceberg) if genuine, at 1s., 2s., 3s. 6d., and 6s. 6d.; or, post free, of HERTZ & COLLINGWOOD, 101, Leadenhall-street.

Micrococcus scarlatinæ is this: there occurred, during the beginning of this year, a severe epidemic of scarlet fever in Wimbledon. This epidemic was also traced to milk coming from a particular farm. In one of the houses supplied with this milk there occurred cases of scarlet fever amongst human beings, and at the same time a pet monkey, who also consumed a good deal of the milk, became ill; it died after five days. I had the opportunity to make a *post-mortem* examination of this animal, and there could be no doubt about its having died of scarlet fever. From the blood of this monkey I obtained by cultivation the same micrococcus as was obtained from human scarlet fever, from the Hendon cows, and from the condensed milk. Experiments made on animals with this micrococcus of the Wimbledon monkey showed that the same disease is produced both by inoculation and by feeding.

"'It having been proved, then, that the cow is susceptible to infection with scarlet fever from man, the next important question is this, How does the milk of such infected cows assume infective power? Clearly in one of two ways; first, either the milk becomes infected by the milker during the process of milking, particles of contagium being rubbed off the ulcers of the udder or teat; or the milk *per se* is possessed of infective power—that is, it being a secretion of a constitutionally diseased animal. From previous and from more recent observations, I am inclined to think that both views hold good.'

"'In another place Dr. Klein adds: 'I think I may, after this, say that this microbe, *Micrococcus scarlatinæ*, is the cause of human scarlet fever; further, that it produces in bovine animals a disease identical with the Hendon disease and human scarlet fever, and that consequently, while the cow is susceptible to infection with human scarlet fever, it can in its turn be the source of contagium for the human species, as was no doubt the case in that milk epidemic from the Hendon farm.'"

Dr. Klein's views were thus clear and emphatic. The cow-disease he held and holds to be scarlet fever existing as a bovine disease, and its germs swallowed in the milk gave origin to that fever in man. So far Dr. Klein's case seemed to be thoroughly proved.

Dr. Crookshank, who is Professor of Bacteriology at King's College, London, and who has made the study of germs and their development a speciality, read a paper on December 15th, 1887, before the Pathological Society of London, in which he dealt with a case of cow-disease of apparently similar nature to that investigated by Dr. Klein. The result of Dr. Crookshank's investigations, it must be confessed, are diametrically opposed to those of Dr. Klein; and the problem of scarlet fever infection as regards cow-disease would appear from these latest researches to be well-nigh as far from a satisfactory solution as ever. It will suffice that Dr. Crookshank's own words be used to tell this latest study of scarlet fever.

Describing the disease in the cow, he firstly notes that "there was a characteristic disease of the udder and teats. On the right teats there were numerous sores varying in size from a pea to a penny. The sores were covered with crusts varying in thickness and generally fissured. In some they were flat, in others conical. Some were with difficulty removed with forceps, others were readily detached. The crusts varied in colour from reddish-brown to a very dark brown or almost black. On detaching or scraping a crust there was a granulating and somewhat indurated base. On the right anterior teat there were several ulcers, from which apparently the thick crusts had been detached, and new scabs were forming. On the left posterior teat there were unusually large dark brown crusts, especially at the extremity of the teat."

The question whether or not the disease could be conveyed to other animals was soon solved. "With the discharge," says Dr. Crookshank, "and with scraping from the ulcers I inoculated four white mice, one guinea-pig, and two calves. Of the two calves one was inoculated by scarification on both ears; the other was scarified on the left ear and inoculated on the left groin by making an incision through the corium and rubbing in a scraping from an ulcer. In each ear and in the groin there were positive results. In the large brown calf inoculated in the right ear in two places, one place went through the following changes. On the third day there was apparent vesiculation, and commencing formation of crust. From day to day the crust thickened, and on the eighth day the crust was at its height, and detached at the edges. By removing the scab an ulcer was exposed. There was slight inflammatory thickening. About the thirteenth day the ulcer had quite healed. This corresponds very closely with the results obtained by Dr. Klein. The temperature of the calf was only slightly raised."

The disease passed naturally from the cow to a suckling calf. Next in order came the proof that the disease was capable of conveyance to man. Several of the milkers had been inoculated on their hands. No scarlatina symptoms were however developed. It was therefore left to enquire whether, seeing the Hendon epidemic had been alleged to owe its origin to milk infected by a similar disease of the cow, this ailment of the animals would or did similarly produce scarlet fever among milk consumers. Dr. Crookshank answers this all-important point as follows:—"As I have said, there were altogether about 160 animals on these farms, and all, or nearly all, had contracted the disease. The milk was drunk on the farms and in the village, but most of it, amounting to eight churns a day—that is, sixty-four barn gallons, or 1,088 pints,—was sent twice a day to a large city. Not being distributed in a wealthy neighbourhood, we may roughly estimate the number of persons drinking the milk at about 1,500 or 2,000. I was informed that there were no cases of scarlatina on the farms or in the village. In the town district in which the milk was distributed there was no epidemic."

Here we have a direct contradiction of Dr. Klein's views. But was the disease the same as that which, according to Dr. Klein, had produced the Hendon fever. Dr. Crookshank affirms that the two cow-ailments are identical. Here are his reasons:—"From these observations and researches, I think that we are justified in concluding that the disease I have described is identical with the Hendon cow-disease. For—(*a*) In both cases we have an eruption confined almost entirely to the teats, and presenting precisely the same appearance and with the same history. (*b*) In both the disease is communicated from animal to animal by the virus being conveyed by the hand of the milker. (*c*) In both the disease is communicable to man when the virus is received into abrasions or scratches on the skin, and produces, judging from the description, a similar disease. (*d*) In both the disease is communicable by experimental inoculation. (*e*) In both there are occasionally the same constitutional symptoms, slight rise of temperature, eruption on the skin, patches devoid of hair, running from the eyes, &c. (*f*) In both there are streptococci (or germs) associated with the disease, which are identical in every respect in their microscopical

appearances and in their characters on cultivation. And therefore I am of opinion that we are justified in concluding that the Hendon cow-disease was not scarlatina in the cow, and that in the Hendon cases the source of infection was from some unascertained human source."

The matter would therefore appear to be puzzling in the extreme. Dr. Crookshank is of opinion that the disease he examined was one of true Jennerian cow-pox —or that ailment which affords vaccine matter for the use of the vaccinator. It will be a matter of difficulty we opine, to traverse Dr. Crookshank's conclusions. What we do know of cow-disease leaves the question of scarlet fever, as related to bovine ailments, an open one. Is it possible that a disease such as Dr. Klein and Dr. Crookshank have described, with such different results, may possess infective powers at one period or under one set of circumstances, while at another time it loses such powers of producing disease in man? Or are there two distinct diseases of the cow, masquerading under a similar guise after all?

"EX LUCE LUCELLUM."

A Short Account of the Chemistry, History, and Manufacture of Lucifer Matches.

BY E. GODWIN CLAYTON, F.I.C., F.C.S.,
Member of the Society of Public Analysts, &c.

SECOND PAPER.*

THE word "phosphorus" has now a restricted meaning, and is used only to designate the element with which we are at present concerned. Before the properties of this curious substance are described, it will be well to explain, concisely and in as simple language as possible, the chemical principles upon which the manufacture of lucifer matches is based. When two elementary substances chemically combine together, the act of union is frequently accompanied by the production of light and heat, and is rendered visible in the form of flame. This kind of chemical combination is commonly called "burning" or combustion; and ordinary combustion, such as is seen in a fire, candle, match, &c., is a rapid chemical combination of atmospheric oxygen with the carbon and hydrogen of the wood, coal, paper, or wax, as the case may be.

In short, combustion is *oxidation*, or the chemical union of oxygen with other elementary substances. Heat usually promotes and often initiates chemical combination: lucifer matches are instantaneous light and *heat*-producers; hence the use of a match to start the combustion of other materials. Friction also sometimes promotes chemical combination. This is why a match is itself ignited when rubbed on a suitable surface. Air supports combustion because of the oxygen it contains: pure oxygen, of course, supports combustion far more vividly than air. Bodies which are capable of combining with oxygen are said to be *oxidisable:* such bodies are the chief constituents of "combustible" substances. Carbon, hydrogen, sulphur, and phosphorus are all examples of oxidisable substances; other bodies, such as flint, chalk, clay, and sand, are incombustible; and there is yet a third class of substances, which do not burn, but which very readily part with the oxygen that they contain, and are therefore known as *oxidising agents.*

Such are chlorate of potassium, nitrate of potassium (commonly called saltpetre or nitre), peroxide of chlorine, peroxide of lead, peroxide of manganese, and nitrate of lead. If one of these oxidising agents be brought into contact, under proper conditions, with an oxidisable body, *i.e.*, with a body having an affinity for oxygen, the latter will be oxidised at the expense of the former, which is deprived of some or all of its oxygen. Chemical union thus brought about between an oxidisable substance and the oxygen of an oxidising agent is usually a very energetic and brilliant form of combustion. When friction is applied to an intimate admixture of an easily oxidisable substance, with an oxidising agent (both bodies being in a fine state of division), the mass bursts into flame: in other words, chemical combination, accompanied by light and heat, or *combustion*, ensues. The more easily capable of oxidation on the one hand, and the more powerful the oxidising agent on the other, the more brilliant is this combustion.

A pre-eminently easily oxidisable substance is the element phosphorus, already referred to. So powerful an affinity has phosphorus for oxygen, that, if exposed to the air, it is slowly and *spontaneously* oxidised at ordinary temperatures. This gradual oxidation is the probable cause of the luminosity of phosphorus in the dark, a singular property, in which originated the name of the element. So low is the temperature required to initiate the *rapid* oxidation or combustion of phosphorus in air that the warmth of the hand is sometimes sufficient to ignite it, particularly if very slight friction be also applied; and, when in a very fine state of division, phosphorus spontaneously inflames at an even lower temperature than that of the human body. A solution of phosphorus in bisulphide of carbon, thrown upon blotting paper, or any other absorbent surface, will rapidly evaporate, leaving phosphorus, in a finely divided state, spread over the paper or other material; spontaneous inflammation of the phosphorus rapidly ensues, and usually gives rise to ignition of the fabric upon which the liquid has been thrown. This highly inflammable and dangerous solution is believed to possess many of the properties belonging to the *oleum incendiarum* of the Romans, and to the "Greek Fire" used by the Byzantine Greeks at the sieges of Constantinople.

So dangerously inflammable, indeed, is the element phosphorus that it must—even when in only small quantities—be kept under water. Exposure to the air for any great length of time invariably ends in inflammation of the mass, and may lead to calamitous results. Persons have sometimes suffered from the most frightful burns, produced by the melting and spontaneous ignition of pieces of phosphorus, ignorantly placed by them in their pockets. Phosphorus, in a pure state and in its ordinary form is a somewhat brittle, yellowish-white, solid substance, resembling bees' wax in appearance. It melts when heated to 111·2 degs. Fahrenheit, and inflames at 140 degs. Fahr. It is intensely poisonous, a dose of one fiftieth of a grain having been known to poison a child, and a man and woman having died from the effects produced by one fifth and one eighth of a grain respectively.

"Phosphor paste" vermin-killers consist essentially of flour mixed with small proportions of finely divided phosphorus and Prussian blue, or some other colouring matter. There are now known to be several varieties of phosphorus, two of which, as will be seen hereafter, are of capital importance to the lucifer match manufacturer. They are called, respectively, vitreous, yellow, or ordinary phosphorus, and red or

* The first paper of this series was published in HEALTH, No. 246, for December 23rd, 1887.

amorphous phosphorus. The first has already been described: the second differs from it in many remarkable respects, being unchanged by exposure to air, evolving no vapours, being non-luminous in the dark, non-poisonous, and non-inflammable by friction or at any temperature short of 500 degs. Fahr. Notwithstanding these extraordinary *physical* differences between ordinary and amorphous phosphorus, there is no *chemical* difference between the two bodies, which are mutually convertible, one into the other, by suitable means. This property of the same kind of matter to exist in several different forms possessing dissimilar characters is termed by chemists *allotropy*. Red phosphorus was not discovered until the year 1845: this discovery, made by von Schrötter nearly 200 years after the first isolation of yellow phosphorus, has proved of immense importance in connection with the lucifer match industry, as will be presently shown.

The matches made at the present day include, firstly, the ordinary wooden match or "lucifer"; secondly, "vesuvians" or "fusees," principally used by smokers; and thirdly, "vestas," in which a thin wax taper is substituted for wood. The stages of manufacture in the first case are "splint-cutting," "filling," "dipping," drying, and packing. The preparation of the splints, or splint-cutting, constitutes the first stage in the manufacture of the lucifer. The splints are chiefly made from straight-grained Canadian or Swedish pine-wood, suitable lengths of the wood being divided into pieces of the required form and size by means of a splint-cutting machine. English-made splints are usually rectangular in section, but machines have been constructed which furnish splints of a cylindrical shape; splints of the latter kind are commonly met with on the Continent. "Filling," the next operation, is the transference of the cut splints to the "filling frames," in each of which a large number of splints are placed in juxtaposition, with the ends conveniently exposed, and ready for the next stage of the proceedings, *viz.*, the "dipping." First, however, the ends of the wooden splints are generally rendered more easily inflammable by being dipped in a bath of melted paraffin wax.

Formerly, melted sulphur was used instead of paraffin, or the wood was dusted over with powdered sulphur just before being dipped in the match composition. Even now objectionable matches of poor quality are met with, particularly abroad, in which the wood is coated with sulphur. Such matches, after the first flash, burn for a few seconds with a non-luminous blue flame, and emit an abominable and suffocating odour of "brimstone." It need hardly be said that paraffin is far preferable to sulphur. Next comes the "dipping." Almost every manufacturer has his own especial igniting composition, and a particular method of preparing it: but the various compositions now used consist essentially of some form of phosphorus (the oxidisable body), in a very fine state of division and mixed intimately with oxidising agents, with which it will readily inflame by friction, together with cementing and colouring matters, and with some chemically inert substance—such as fine sand or powdered glass—added simply with a view to increasing the friction when the match is rubbed.

Thus (1), phosphorus, potassium chlorate, glue, whiting, and powdered glass; (2) phosphorus, potassium chlorate, red lead, and glue; (3) phosphorus, potassium chlorate, fine sand, and glue, are examples of mixtures suitable for *ordinary* matches (*safety* matches will be treated of hereafter). In Germany, potassium nitrate or lead nitrate, together with red lead, is preferred to potassium chlorate, the result being that matches made in Germany, as a rule, ignite more quietly than English matches. Match-heads are coloured by Prussian blue, ultramarine blue, vermilion, &c., according to circumstances. *Vestas* contain more phosphorus than lucifers, so that they inflame rather more readily and brilliantly. The large heads of *vesuvians* are usually made of powdered charcoal (the oxidisable substance), potassium nitrate, (the oxidising agent), powdered glass, and gum arabic, together with cascarilla bark or gum benzoin (the scenting ingredient). This mixture is ignited by heat, but not by friction, charcoal requiring rather a high initial temperature for the commencement of its combustion. The igniting composition, which *is* fired by friction, and which constitutes the tip, contains phosphorus, and is such a mixture as those previously described. In some fusees the wooden splint is replaced by a short piece of glass tube; in others, the heads are moulded, for the sake of additional security, round thin wires, which are fastened by braids to the splints.

Urinal Cakes.—These are much used for the disinfection of urinals. One form of these is made by fusing together sulphates of copper, iron, zinc, alum, and soda, and moulding into cakes.

Stimulating Ointment for the Hair.—The following has been found very efficacious in preventing premature baldness: Prepared beef marrow, six ounces; expressed oil of mace, two ounces; olive oil, one ounce; melt with gentle heat. Balsam of tolu, one drachm; spirit of wine, half an ounce; dissolve, and add essence of bergamot, two drachms; oil of rosemary, one drachm; oil of cloves, half a drachm; tincture of cantharides, four drachms. These all to be well stirred into the fat as it cools.

The Blind.—The governors of Christ's Hospital have made the welcome announcement that, in consequence of the many additions to the charity of the Rev. William Hetherington, who in 1774 enabled the governors of the hospital to pay £10 a year to each of 50 blind persons, they are now in a position to pay the like amount annually to upwards of 700 blind persons. Applications are to be made during the month of October to the governors at the hospital. Applicants must be at least sixty-one years of age, must have been born and still reside in England (to the exclusion of Wales and Berwick-upon-Tweed), must have been afflicted with total blindness for at least three years, and must have been residing in the parish in which they now live for at least three years from the date of petitioning. Those who have never occupied a better position in life than day labourers or journeymen, or domestic or menial servants, or who are getting a living by turning a mangle or polisher's wheel, or by other like employment, as also those who have ever begged, or those who have at any time of their lives received parochial alms or allowances as paupers, will not be eligible. Medical men so frequently come across distressing cases which require aid such as Hetherington's charity is capable of affording, that they will be glad to know that so large a fund is now disposable for this good object.

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Personal Health

"Be timely wise;
With health all taste of pleasure flies."—*Gay.*

A PROFESSIONAL FALLACY.

IT is high time that someone spoke out, in no uncertain tone, against the present manner in which physicians habitually treat their consumptive patients. We never tire of writing upon this disease, for it sweeps away about a fifth of the human family. Yet, amid the holocaust it makes, the unafflicted in the main look unconcernedly on. The State takes little or no cognizance of it. The profession endeavour in the majority of cases to repair the patients with drugs. All this is a grievous mistake.

When consumption once fixes upon a man, it melts him down like heat a block of ice. Once under headway, the physician has about as much control over it as a fire company over an enormous fire. Let us remember this—the time to deal with consumption is while it is yet a great way off. Another point—as long as the conditions obtain which favoured the oncome of the disease, medical skill is futile. Recently the writer took a trip to some of the dispensaries where consumptive diseases are treated. This was succinctly what he saw—*Examinations, cough mixtures, cod liver oil, orders to return in ten days.*

Not a word about the soil the patient lived on, the size of the room slept in, or the amount of overcrowding to which the patients were subjected. Now, these bright fellows, who sit there watching people daily decline and die off like sheep, must be well aware of their utter uselessness. The year just past has been pregnant with new suggestions and "new remedies" for the treatment of consumption. The first thing to be done is to utilize the knowledge we already have, and to bear in mind that no medicines will compensate for continued disregard of nature's laws.

Those familiar with the subject know very well that dwellers on clay furnish twice as many consumptives as do those on sand. London and its suburbs are largely built on clay, and, travel where one may, this fact is disregarded by builders generally. Were the houses built clear of the ground, as the sojourners in Africa build their houses or huts—far above the ground, so that the wind could blow under them—there is no doubt but that death-rate from consumption would be greatly lessened at once.

The death-rate which has been known in Millbank from overcrowding, and the deaths from overcrowding in the army, have been simply appalling. By rectifying in a measure this overcrowding, the mortality has been reduced. What a great truth we have here. This may be called lesson number two. Consumptive patients can only be expected to improve when they have large rooms to work in and sleep in.

Too long has it been taught that means of averting consumption existed only in New Mexico, Colorado, or the Alpine forests, and are possible only to the rich.

Clothing constitutes an important point for consideration. It has frequently been pointed out in HEALTH how the wearing of flannel lessened the death from pneumonia one half. The consumptively inclined should wear flannel the year round, and particularly at night.

Let the phthisical look out for dyspepsia. When the fates are going to inflict with this disease, the warning is indigestion. The best preventive of dyspepsia, perhaps, is never to eat quite to the full, and absolute regularity in all the habits of life.

The consumptive, then, should be warmly clad, well fed, live in large, properly aired, light rooms, which should be in a dry house, if possible, on sand. Dust-laden air is a pregnant cause of phthisis. Is it too much to hope that ere long every house may, with an inexpensive electric battery, clear its atmosphere of smoke in time of fog? Nay, more—is it too much to hope that the state which has passed a Poison Act may not some day enact laws regulating the building of houses on clay, and the size of the rooms, which are such fatal factors?

A word about cod liver oil. It is good food—the best for consumptives—but should not be taken alone, lest it disturb the stomach. The best form of it is undoubtedly the Kepler Solution, which should not be overlooked. But bear in mind that not one thing only, but many things are to be considered. A few of the more important we have thus endeavoured to outline briefly.

A READY MEANS OF TREATING MAD DOG BITE.

DR. T. MACCALL, of Morecambe, writes to the *Lancet* as follows:—In view of the numbers of deaths there have been lately from hydrophobia, I have designed a 'virus destroyer' as a preventive, which, if adopted, would go a long way towards preventing that fearful disease. It is in the form of a small case containing a very soluble prepared point composed of compressed nitrate of potash (ten parts) and corrosive sublimate (two parts), and meant for public and police use, and to be attached to the ordinary key ring, and thus be always at hand for instant use in cases of dog-bite or poisoned wound.

The composition of the virus destroyer is not the chief point. I only chose corrosive sublimate because it is the strongest at present known, and will keep without risk or loss. The main thing is to have an antidote at hand for instant use. These could be made cheaply, and be in the hands of everyone, and for the poor the police could carry them and be instructed in their use. At present, it is the delay that is so fatal before aid can be got in many outskirts, &c., where dogs are and no help is near. Their use is not meant to supersede medical advice, which could be sought as hitherto, but the sufferer would then be treated with the virus probably destroyed, and not, as now, after it has been absorbed.

A dog-bite is usually a superficial scratch or tear, and not a sharp puncture, and even if the canine teeth be inserted deeply the saliva gets mainly or entirely rubbed off and left on the surface. The lunar caustic still used is decomposed into chloride and so rendered inert. Setting aside extreme cases (which I believe are attended with least risk, on account of copious bleeding), in by far the majority of cases the virus destroyer would destroy the virus. Full directions would be given with each, and instructions that after use a doctor should be at once sought.

The moral effect, too, of the use of these would be great; many of the deaths arise from fear, and I have no doubt that in these fatal cases, when even the parts bitten were excised, either it was done too late or the bad result was due to mental impression.

I may add that, from the first, and all through your various reports, I have never been able to see anything but risk in Pasteur's treatment. Experiments on animals and bites on a nervous man who has heard of the ravages of rabies are widely different. It by no means follows that, for reasons stated before, all persons bitten by rabid dogs will take hydrophobia or that

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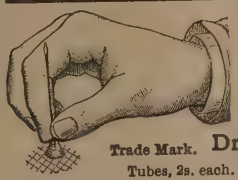

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The Editors of the *Lancet* add that "the notion advanced by Dr. Maccall is decidedly worth entertaining; his method presents nothing which can be objected to on *a priori* grounds, and may prove of great value. There is nothing so convincing, however, as experiment. The antiseptic pencils would also be useful in rendering ordinary small wounds aseptic."

The Lepers of Molokai.—Molokai, "the leper island of the Pacific," is one of the Sandwich group, and the scene of Father Damien's heroic labours. By far the best description of that home of the banished leper and of the missionary care bestowed on him is that by Mr. Charles Warren Stoddart, one of the most painstaking, and at the same time picturesque, of contemporary transatlantic writers. From the little volume (published at Notre Dame, Indiana, U.S.) we gather that there are always between 700 and 800 lepers in the settlement, and that the average death-rate is 150 per annum. Within the last fifteen years, 2,500 of these afflicted ones have been segregated to Molokai. The sketch of Father Damien himself is entitled to take rank with Manzoni's portrayal of Cardinal Borromeo, in the "Promessi Sposi." The Father's experiences, as told by Mr. Stoddard, who was his guest in the leper island, add force to the saying, "Truth is stranger than fiction."

What the Morphine Habit will do.—The ingenuity of morphine victims to hide their vice has never been better illustrated than in the case of a young girl at a fashionable young ladies' boarding school near Philadelphia, as told by a contemporary. The disclosure came about accidentally. When the young student returned to the school this fall, she had periods of deep despondency, and often asked the privilege of going to the room in the seminary set apart as a hospital. There she would lie for a day at a time, only rousing herself when any one approached the table, on which stood an ink bottle and a stylographic pen. The nurse having occasion to send a message to the doctor attempted to write with this pen, the young girl at that time being asleep. The pen not only refused to write, but the practised eye of the nurse instantly recognized in the point the puncturing needle of a hypodermic syringe. This led to an examination of the ink bottle. It was a four-ounce bottle, but there was no ink in it. It was painted black on the outside, and contained Magendie's solution of morphia, enough for 128 one-half grain doses, or sufficient to last until the Christmas holidays. The principal of the school was summoned immediately, and the sleeping girl's arm bared. It was punctured from the shoulder almost to the hand, and the livid blue marks confirmed the suspicion, which was changed to absolute certainty by the small abscess which had begun to form in the fore-arm just above the wrist. The habit had been formed about two months only, and there is a possibility that a cure can be effected.

The Family Circle

"The child is father of the man."—*Wordsworth.*
"In bringing up a child, think of its old age."—*Joubert.*

THE CORSET AND DISEASE.

Dr. Robert L. Dickinson, lecturer on midwifery at the Long Island College Hospital, has prepared a very elaborate paper on the corset, discussing from a scientific standpoint the questions of pressure and displacement caused by it. This paper was read before the Brooklyn Pathological Society, where it excited great interest and discussion. It has been published in full, with seventeen figures, all of which were drawn by the author of the paper, illustrating the effects of corset-pressure on the chest and abdomen and their contained organs, in the *New York Medical Journal* of November 5. Dr. Dickinson says: "Ridicule, argument, and invective have been freely expended upon the artificial small waist since the days of Martial and Galen. Yet the habit of corset-wearing has received little systematic study, and men's opinions are widely at variance. We frequently meet with the statement that corset-wearing works great injury; we discover a catalogue of five and ninety different diseases and disorders due to tight-lacing; we find Bouvier, who has written the elaborate and interesting history of this article of dress, vigorously asserting that 'the modern corset, moderately tightened, is without appreciable influence on the health of the healthy woman,' and we encounter all shades of opinion between these extremes. But unsupported assertion is poor evidence, although a general impression must carry some weight. To obtain clear perceptions of the action of the corset, I have endeavoured to measure the amount of pressure it exerts, to ascertain the distribution of the pressure, and to determine the displacements resulting therefrom, studying the subject with as little bias as possible, stating bald facts, and rarely expressing opinions."

The first tests which Dr. Dickinson applied were to determine the external pressure by the manometer; and as a result he gives a table of the various pressures within the body, as that of the blood and of the expiratory force of the lungs, when compared with the pressure exerted by the corset.

In reference to the words "tight" and "loose" as applied to corsets, the author says these words need to be defined. They lack precision, but are necessary. We cannot determine any limit of contraction in inches as the dividing-line, since in certain cases an inch and a half lessening of waist-measure with one woman will cause more pressure and more distress than five inches in another. The guide must be the patient's sensations, when we can trust her testimony, and signs that are readily appreciated, such as the restricted respiration and movement, evident discomfort when the corset is first hooked, flushing of the face in a warm room, and the indentations in the skin after removal of the corset. Appearance goes for nothing: a large bust and wide hips or shoulders give an impression of slenderness in the waist which may be entirely deceitful. The least pressure he has estimated from a corset is twenty-one pounds; the greatest pressure is eighty-eight pounds. Within the half-minute that follows any exertion, such as rising, lying down, turning over, or straining, the mercury in the manometer rises from a half-inch to an inch and a half, then gradually falls to its steady level. On taking off a corset, one often observes that

the circumference of the waist is taken at once, and again a few minutes later, an increase of about an inch will have occurred. Six inches difference between the circumference of the waist over the corset and the waist with the corset removed is the greatest difference which he has measured. Five and a half and five he has met with once each.

In the woman who wears no corsets the many layers of bands about the waist, on which heavy skirts drag, are sufficient to cause considerable constriction, as Dr. Mosher states. The thoracic cavity suffers less diminution in size and alteration in shape from corset-wearing than the abdominal. The principal constricting effect is exerted below the fifth rib. The inferior edge of the lung is compressed, and its ability to distend the lower part of the pleural cavity seriously crippled. Compensation in part is effected by the tendency of the corset when firmly adjusted, to raise the shoulders, forcing the upper lobes to do the breathing, as Sibson has proved, raising the thoracic, or five upper ribs, widening the interspaces (also a constant condition in the female), and in this way expanding the highest part of the conical thoracic cavity. Freer play of the apices in women who wear corsets would lead one to expect consolidation at these points to be relatively less frequent than in men, while affections at the base should be more commonly met with. An increased tendency to emphysema of the upper lobes might also be anticipated.

The author raises this interesting question, May the peculiar character of the respiration in women be attributed to the use of corsets? Two observers who are especially qualified to testify have stated the case very forcibly. Sibson says, "In the adult female the form of the chest and abdomen and the respiratory movements are often undoubtedly modified by tight lacing. The form of the chest and the respiratory movements do not differ perceptibly in girls and boys below the age of ten. Although the form of the chest remains nearly the same until the age of twelve, the abdominal movement is then somewhat less, and the thoracic somewhat greater, in girls than boys. At this age and earlier, stays are worn, and, though they do not compress the body materially, yet they restrain the free expansion of the lower ribs during free exercise. After the age of fourteen the form of the chest and the respiratory movements differ materially in females and males. I think it probable that in females, even if they wore no stays, the thoracic respiration would be relatively greater, and the diaphragmatic less, than in man; but this is only surmise. Delicate men," he says further, "approximate to the female thoracic breathing; vigorous women, to the male abdominal breathing; and long-distance runners have the least thoracic breathing of all men (in the quiescent condition). The diaphragm would seem, therefore, to be a muscle capable of developing to meet increased demands as much as any other that the athlete strengthens."

Walshe says: "The agricultural woman, who knows not stays, breathes more like a man than the town female. Besides, during sleep the conditions of pectoral and ventral action of the female are much less strikingly different from those in the male than in the waking state: the waist is relieved, for a time, from constriction. And, further, the male and female dog breathe almost exactly alike, as do the horse and mare: the action is abdominal and lower costal."

Dr. Dickinson calls attention to the observations of Dr. Mays, of Philadelphia, who has recently studied the respiratory movements of Indian girls in the Lincoln Institution, and whose results have been referred to in *Science*. These girls had always worn loose clothing. They ranged between ten and twenty years of age. Tracings from their costal and abdominal respiratory movements showed a very close analogy to those of the civilized male, and that, "so far as the Indian is concerned, the abdominal is the original type of respiration in both male and female, and that the costal type in the civilized female is developed through the constricting influence of dress around the abdomen. This is markedly shown in the greater prominence of the costal movements in those girls who were either one-half or three-fourths white, and who were hence dominated to a greater or less extent by the influence of civilized blood. . . . It is also evident that the costal type of respiration in the civilized female is not due to the influence of gestation."

Long-continued compression, by the corset, of the wall of the abdomen in the epigastric and hypochondriac regions, gradually brings about a thinning of its adipose layer. Below the ring of constriction the fat accumulates. The woman who abhors "a stomach" yet adopts the most effective means of cultivating one. Flabby, old, or obese persons are especially prone to pile up panniculus adiposus below the navel. Many stout young men in good condition have been examined, and not one has been found in whom this tendency is evident. On the contrary, the fatty layer above the umbilicus is usually thicker than that below it. These men wear suspenders. In eleven healthy women below thirty who have been in the habit of wearing corsets (of varying degrees of tightness) the fat below the navel has always been found to be more than twice as thick as that above, while one to three is no uncommon ratio.

That this is not normal is proved by the fact that in two teachers of gymnastics measured for me by Dr. Mosher the fatty layer was thicker above. With a corset that is "quite tight," but not so tight as the patient "could bear it, as in a new dress or at a ball," the displacement of the uterus is the third of an inch. The distance seems insignificant, and may only be considered of importance in view of the following facts: 1st, That this is almost the deepest position to which the structures can be forced by straining down; 2nd, That the long-continued action of the depressing force is exerted during the period of growth; 3rd, In view of the results likely to ensue in case of weakened and enfeebled supports, in case of increased size and weight of the uterus (normally present during menstruation), and in case of incipient displacement; it naturally follows, 4th, That this forcing downward is sufficient to render the uterine supports tense (be they ligament, "column," or pelvic surroundings *in toto*), and that in their taut condition any extra or added stress, like deep breathing, or exertion, or bending, might well be enough to each time slightly overstrain these stretched supports. Slowly and steadily as this force acts, yielding must in time occur. In fact, Engel states that in every one of thirty autopsies in which evidences of tight lacing were found, prolapsus of the uterus was present in some degree, except where adhesions had prevented it. Will not this account in part for the uterine troubles of women supposed to be

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due to many of their sedentary occupations, such as sewing-machine work? The man bending forward relaxes his abdominal wall, and enormously lowers his intra-abdominal pressure by so doing (Schatz), but the corseted female, who writes or sews, produces the opposite effect. The earlier corsets are worn, the more the liver would be affected, since it is proportionately much larger in the child than in the adult. Previous to puberty its weight may be as much as one-thirtieth, or even one-twentieth, of that of the entire body: in the adult it averages one-fortieth.

"The practice of tight lacing," says Murchison, "may cause displacements and malformations of the liver, which may simulate enlargement, and which are of considerable importance in diagnosis. Tight lacing may act on the liver in three ways,—according to the situation, the tightness, and the duration of the constricting cause. (*a*) The liver may be displaced upward or downward, according as the pressure is applied below or above. The precise situation where the pressure is applied will vary with the prevailing fashion of dress; but most commonly in this country the displacement is downward, and this may be to such an extent that the lower margin reaches the ilium, and the liver appears to fill up the whole of the right side and front of the abdomen. [Frerichs and other writers speak of this amount of change in location.] (*b*) In consequence of lateral compression the liver may be elongated in its vertical diameter so that a larger portion of it is brought into apposition with the abdominal and thoracic walls. This is a very common result of tight lacing. (*c*) When the pressure is exerted by a tight cord, it may produce deep fissures in the substance of the liver, as the result of which, portions of the organ may be more or less detached, and may even be felt as movable tumours through the abdominal parietes. Apparent enlargements of the liver from tight lacing are far more common than is generally believed."

If, from the testimony of these five observers—Braun, Corbin, Engel, Frerichs, and Murchison—the extreme mobility of the liver has been proved, although we grant that these extremes result from tight-lacing, are we not justified in believing that even a loosely adjusted corset must definitely displace so mobile an organ? The difference between the loosest corset and the tightest is less than might be imagined. Dr. Dickinson has not been able to double the pressure on requesting a patient to lace her loose corset to the utmost she could bear.

Engel found the stomach displaced in the following remarkable manner. It was shoved to the left. Its long axis, from a horizontal or oblique direction, was changed to a vertical, so that the lesser curvature ran down directly to the left of the spinal column. The pyloric end was depressed as far as the fourth lumbar vertebra. Constriction not unlike the liver-furrow was occasionally met with, but without pathological changes in the walls. The pancreas may be dragged down to a perpendicular position on the face of the vertebral column, reaching down to the promontory. These were extreme cases, of course.

A few of the most palpable changes brought about by corset-pressure have thus been briefly described. There are many others as much more important as they are more subtle and difficult of proof, such as the disturbances of abdominal circulation, the effect on digestion, the limitation of exercise, and the slowly increasing action on the general health.

The conclusions reached by the author of this interesting paper are—1. The maximum pressure at any one point was 1·625 pound to the square inch. This was during inspiration. The maximum in quiet breathing was over the sixth and seventh cartilages, and was 0·625 of a pound. 2. The estimated total pressure of the corset varies between thirty and eighty pounds—in a loose corset about thirty-five pounds, in a tight corset sixty-five pounds. 3. Within half a minute after hooking the corset, such an adjustment occurs that a distinct fall in pressure results. 4. The circumference of the waist is no criterion of tightness. The difference between the waist-measure with and without corsets gives no direct clue either to the number of pounds pressure or to the diminution in vital capacity. Relaxation and habit seem to affect these factors largely. 5. The capacity for expansion of the chest was found to be restricted one-fifth when the corset was on. 6. The thoracic character of the breathing in women is largely due to corset-wearing. 7. The thoracic cavity is less affected by the corset than the abdominal. 8. The abdominal wall is thinned and weakened by the pressure of stays. 9. The liver suffers more direct pressure, and is more frequently displaced, than any other organ. 10. The pelvic floor is bulged downward by tight lacing one-third of an inch (0·9 cm).

Ground Coffee digested in cod-liver oil quite overcomes the fishy taste of the latter.

Adulterated Flour.—Adulteration of flour by means of potato flour may be detected by means of acids. Take a spoonful and pour upon it a little nitric acid; if the flour be of wheat, it will be changed to an orange yellow; if wholly of potato flour, the colour would not be altered, but the flour formed into a tenacious jelly; if, therefore, the flour be adulterated with potato flour, it will not be difficult to decide. Again, take a spoonful of the flour, and pour upon it a little muriatic acid; if the flour be of pure wheat, it will be changed to a deep violet colour, without odour; but if potato flour be mixed in it, it will then have an odour like that of rushes.

Hindoo Method of Preventing Small-Pox.—The following account, taken from the *Journal d'Hygiène*, is given by an eye-witness:—"The festivals of Mariannah, the divinity invoked by the Hindoos for protection from the small-pox, consist of fasts, baths, sacrifices, dances, and marches through fire; this last and dangerous performance taking place after sunset. Near Bangalore, the principal city of the province, the festival is held in a small temple where seven or eight priests officiate. A ditch, eighteen feet long by twelve wide, is dug in the middle of the first inclosure and filled with burning coals. At a given signal a great number of persons of both sexes and all ages pass out from the temple and form in a procession, singing the praises of the goddess Mariannah, accompanied by cymbals and the inevitable national tourle. All who compose the procession are without clothing, but with the body covered with a yellowish preparation whose composition is not known by the natives. After one of the priests has sacrificed a cock, the devotees pass and repass through the fire; they advance, then retreat, sometimes slowly, sometimes quickly, without evincing the slightest sign of pain, and each of them, walking or dancing, crosses this fiery furnace, forming a very narrow path in the centre. This promenade in the fire is preceded by ablutions and three adjurations to the goddess. When the ceremony is finished, the procession re-enters the temple and the sufferers are washed in a large trough. In this water the young children who are to be protected from the small-pox are dipped, an immersion which, by the way, is rarely efficacious."

Popular Science Papers

"Blessings on Science! When the Earth seemed old,
When Faith grew doting, and our reason cold,
'Twas she discovered that the world was young,
And taught a language to its lisping tongue."

—*Charles Mackay.*

THE PHYSIOLOGICAL ACTION OF ALCOHOL.

BY EDWARD C. MANN, M.D. (F.S.Sc., LOND.)

Member New York County Medical Society, American Association for Cure of Inebriates, &c., &c., Brooklyn, New York. Physician to Sunnyside Home for Inebriates, the Morphine Habit and Diseases of the Nervous System, Brooklyn, N. Y.

FIRST PAPER.

IT will be our aim in the following remarks to present clear, authoritative facts on the physiological action of alcohol, avoiding all the confusing, contradictory and uncertain theories which have so frequently been presented to the public. We can only appreciate the injuries that are done to the human body by alcohol, through the study of its physiological action. We propose to show just what the nature and effect of alcohol is upon the blood, the brain, the nervous system and mind, the heart, the lungs, the liver, the kidneys and all the organs of the human body. Whether it be taken as spirit, ale and wine, all drink the same poison under different forms, the effects of it upon the human body being determined by climate, temperament, mode of life, and the character of the stimulant used. The stimulating nature of the climate on the Atlantic coast combined with the extremes of heat and cold, causes the physical and mental constitution to be much more injuriously affected by alcohol, than is the case in Italy, Greece, Turkey, Spain, and Germany.

The greatest amount of disease and injury from alcohol is always seen wherever the climate and the nervous temperament of the inhabitants render the effect of indulgence in alcoholic stimulants especially hurtful to the brain and nervous system. This is nowhere more noticeable than in our own country, especially on the Atlantic coast, where the peculiarly stimulating nature of the climate induces a peculiar nervous susceptibility, which operates in the production of grave diseases of the nervous system, as well as of other parts of the body, if the alcohol habit be indulged in. With respect to the plea for the unlimited introduction of light wines and beer, it is a significant fact that the almost universal use of light wines in France has not prevented the people from resorting to absinthe and other strong stimulants, while in one French asylum out of 302 cases, insanity was attributed to drink in 102 instances.

From a somewhat extended experience with alcoholism, we think it *almost* an impossibility on the Atlantic coast, for any young man or woman of seventeen years of age to commence indulging in wine and beer daily and not feel a growing desire for some more powerful stimulant, and they will soon resort either to the habitual use of distilled liquors, such as brandy or whiskey, or fall victims to the disease of Dipsomania, where the unhappy person is periodically driven by a wild, irresistible, uncontrollable craving for alcohol into attacks of inebriety ending nearly always in complete intoxication. We have noticed also that it is not the coarse-fibred people, but the kings and queens of society, who, by virtue of their fine nervous organization most readily become affected by Dipsomania. There is to us no more potent temperance sermon than to hear an elegant, cultured man or woman deploring in agony of remorse the fierce appetite for alcohol which periodically masters him or her, and which the will is powerless to resist, as the daily indulgence in alcohol has insidiously drawn the person into the vortex of inebriety.

The average number of beats of the heart in 24 hours, in a water drinker, is, approximately, about 106,000. As alcohol is taken in increasing quantities, this average number rises to about 127,000, and at a later stage to about 131,000. This extra work which the heart is made to do by alcohol, makes it, after awhile, enlarge or hypertrophy, as the heart is beating about 25,000 times oftener in 24 hours than it ought to do. If a person entirely unaccustomed to alcohol takes one fluid ounce of it, his heart will beat 430 times more than the normal in 24 hours. With two fluid ounces per day, it will beat 1,872 times more. With six fluid ounces it will beat 25,000 times more. The heart is made to do this overwork under alcoholic stimulus. Is it any wonder that it finally becomes diseased? The flush which you have all seen on the cheeks of the wine drinker is what physicians term vascular engorgement. This condition is universal in the tissues and organs of the body. When men have died suddenly from apoplexy while drinking, as occasionally happens, and an examination of the body has been made, it has been found that the lungs participated in this vascular engorgement. The blood vessels of the lungs were injected or overfilled. When the brain and spinal cord was exposed to view, they were found in the same condition. The stomach, liver, kidneys, and spleen, all showed this same engorged condition. We had the opportunity, but a short time ago, of observing all this ourselves, after the death of a promising young man who died suddenly from congestive apoplexy, at the age of only 28 years, during a paroxysm of drinking. His history was that he commenced to drink wine freely when 15 years old, and soon abandoned it for the stronger stimulus of brandy and whiskey, and at the age of 18 years had been treated for delirium tremens. The brain looked as if it had been injected with carmine, it was so much congested. This was observable throughout the entire brain, and at the base of the brain inflammation had commenced. There was also inflammation of the pia mater, the delicate membrane which covers the brain, and it was adherent to the brain in patches. The heart was enlarged very much. The liver was enlarged, and fatty degeneration was commencing in it. The kidneys and the spleen were much congested, and greyish-black patches showed the inflammatory condition which had been caused by alcohol on the coats of the stomach.

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DAHL'S CAKES, rightly used, NEVER FAIL.

FULL DIRECTIONS WITH EACH BOX.

Assist the Stomach in Digestion, and Prevent Constipation. Remove Heartburn and Piles.

Absorb all the burning Acids of the Stomach. Prevent Colic.

Preserving the Phosphates of certain kinds of grain, these Cakes supply a long-felt want as a natural Antidote to the disorders of Imperfect Digestion. They are strongly recommended to all Dyspeptics, and to those following sedentary pursuits, also to young People and Children.

Note—DAHL'S CAKES CONTAIN NO DRUGS.

Post free, 2s. 6d. per box. May be had of all Chemists. For full particulars apply to DAHL'S AGENCY, 41, EASTCHEAP, LONDON, E.

A REMARKABLE CASE.

UNDER the above heading the *Doncaster Reporter* of July 6th, 1887, published the following in its editorial columns :—

Our readers may recall the circumstance of a young clerk, named Arthur Richold, falling insensible on the Wheatley-road in this town some time ago, and being picked up, as he continued perfectly helpless, and taken in a cab by two gentlemen to the office of W. P. Fisher, Esq., the solicitor who employed him. On restoring him to consciousness it was ascertained that he was afflicted with what seemed to be an incurable disease. When he was able to speak he said he had been to his dinner and was on his way back to his work, when suddenly his head was in a whirl and he fell in the street like a man who is knocked down. On coming to his senses in the solicitor's office he thought what this might mean, and feared he was going to have a fit of illness, which we all know is a very dreadful thing for a poor man with a family to care for.

With this in his mind he at once sought the best medical advice, telling the doctors how he had been attacked. They questioned him, and found that his present malady was exhaustion of the nervous system, resulting from general debility, indigestion, and dyspepsia of a chronic nature. This in turn had been caused by confinement to his desk and grief at the loss of dear friends by death. The coming on of this strange disease, as described by Mr. Richold, must be of interest both to sick and well. He had noticed for several years previously, in fact, that his eyes and face began to have a yellow look; there was a sticky and unpleasant slime on the gums and teeth in the morning; the tongue coated; and the bowels so bound and costive that it induced that most painful and troublesome ailment—the piles. He says there was some pain in the sides and back, and a sense of fulness on the right side, as though the liver were enlarging, which proved to be the terrible fact. The secretions from the kidneys would be scanty and high-coloured, with a kind of gritty or sandy deposit after standing.

These things had troubled Mr. Richold a long time, and after his fall in the street he clearly perceived that the fit of giddiness was nothing more than a sign of the steady and deadly advance of the complaint, which began in indigestion and dyspepsia. His story of how he went from one physician to another in search of a cure, that his wife and little ones might not come to want, is very pathetic and touching. Finally, he became too ill to keep his situation, and had to give it up. This was a sad calamity. He was appalled to think how he should be able to live. But God raised up friends who helped to keep the wolf from the door. He then went to the seaside at Walton-on-the-Naze, but neither the change nor the physicians who treated him there did any good. All being without avail, he visited London, with a sort of vague hope that some advantage might happen to him in the metropolis. This was in October, 1885.

How wonderful, indeed, are the ways of Providence, which dashes down our highest hopes and then helps us when we least expect it.

While in London he stated his condition to a friend, who strongly advised him to try a medicine which he called *Mother Seigel's Curative Syrup*, saying it was genuine and honest, and often cured when everything else had failed. He bought a bottle of a chemist in Pimlico, and began using it according to the directions. He did this without faith or hope, and the public may, therefore, judge of his surprise and pleasure when, after taking a few doses, he felt great relief. He could eat better; his food distressed him less; the symptoms we have named abated; the dark spots which had floated before his eyes like smuts of soot gradually disappeared, and his strength increased. Before this time his knees would knock together whenever he tried to walk. So encouraged was he now that he kept on using *Mother Seigel's Curative Syrup* until it ended in completely curing him.

In speaking of his wonderful recovery, Mr. Richold says it made him think of poor Robinson Crusoe, and his deliverance from captivity on his island in the sea; and added, "But for Mother Seigel's Curative Syrup the grass would now be growing over my grave."

Our readers can rest assured of the strict truth of all the statements in this most remarkable case, as Mr. Richold (now residing at Swiss Cottage, Walton-on-the-Naze) belongs to one of the oldest and most respected families in the beautiful village of Long Melford, Suffolk, and his personal character is attested by so high an authority as the Rev. C. J. Martyn, rector of that parish, besides other excellent names. We have deemed the case of such importance to the public as to justify us in giving this short account of it in our columns.

by alcohol, and as the brain is affected, the reasoning powers grow weak, and the emotions and passions rule the man or woman as the case may be. All the animal instincts now guide the person, instead of his reasoning faculties, which he or she has weakened, perverted, or destroyed by the use of alcohol. There is also a fall of bodily temperature from the use of alcohol. The blood is directly influenced by alcohol, in that the red blood corpuscles which are the carriers of oxygen all over the body are "crenated" or rendered irregular in form. This is readily seen under the microscope. All the membranes which cover and protect the organs of the body are directly affected by alcohol, as they are very delicately organized. They become either thickened, they shrink, or they become inactive, and lose their functional power. Alcohol does not always kill rapidly, but it kills surely, and its continual use, even in daily moderation, in many persons, confuse the finer operations of the brain and mind. All great explorers and generals agree that its daily use diminishes the power of endurance of the individual who habitually uses it. The temporary excitement and artificial strength it imparts are at the expense of the vital force. It is not a food, and adds nothing to the living tissues. It depresses vital force every time. The use of it as a medicine is very valuable. The abuse of it means intellectual and physical death, perhaps slow, but very sure. A great many men give out unaccountably in the prime of life and become invalids. Upon inquiry, we often find that these men have been for years moderate drinkers, and it takes months of rest and careful nursing to bring them up so that they can get back their lost nervous force and vitality which alcohol has depressed. Alcoholic dyspepsia is a frequent early symptom of the workings of alcohol in the system. There is also mental depression and a very emotional state and insomnia. There is neuralgia, also, and rheumatism and sometimes loss of vision.

PROFESSOR JAMES LONG says that rennet is a simple organism. It is this organism that digests the curd and changes it into cheese. It is a red fungus in the rennet that causes the change. French writers say that cheeses in France are not only made, but their flavour is developed by this fungus.

HEALTHY AND UNHEALTHY OCCUPATIONS. — The Registrar-General has made a comparison between healthy and unhealthy occupations. Assuming the normal average death-rate of the community as the unit of comparison, and calling it 1,000, particular occupations may be regarded as healthy or unhealthy according as the death-rates among those pursuing them fall above or below that figure. The most healthy occupation appears to be that of ministers of religion, whose rate is 556. Next are gardeners and nurserymen, 599; farmers and graziers, 631; agricultural labourers, 701; schoolmasters, 719; and grocers, coal-merchants, paper, lace, and hosiery manufacturers, wheelwrights, shipbuilders, and coal-miners, with all of whom the average death-rate is under 775. The most unhealthy occupations are the trades connected with the liquor traffic and hotel service, with which the death-rate is 2,205; following these are general labourers in London, 2,020; costermongers, bankers, and street sellers, 1,879; innkeepers, &c., 1,521; and brewers, 1,361. After the trades concerned with alcohol, the highest rates are furnished by occupations that involve the breathing of dust—other than coal-dust—and exposure to lead-poisoning. The death-rate among butchers is also high, 1,170.

Public Health

"Health is the first Wealth."—*Emerson.*

THE BURIAL OF SEWAGE AND REFUSE.

AT tolerably regular intervals during the last ten years some one makes the discovery that the disposal of sewage by water-carriage is a bad thing, and proceeds to announce to the ignorant engineers who have been dealing with this problem that the true and only way to dispose of refuse and excreta is to follow Nature and bring it in contact with the earth as soon as possible. The latest specimen of this kind of instruction is contained in an address by Dr. G. V. Poore, of London, on "The Shortcomings of some Modern Sanitary Methods," a title which has a curiously familiar aspect. He declares that the admixture of water with dead organic matters is wrong, because it is antagonistic to a law of Nature; because it disseminates disease; because it fouls water-supplies, &c., &c., and his remedy is to bury all excreta and refuse just beneath the surface of the ground.

Many things connected with civilization, and without which civilization is impossible, are antagonistic to a law of Nature in Dr. Poore's interpretation of that very vague and improper phrase. Most of his objections and criticisms relate to bad work, and there is just enough truth in them to make the address interesting to those who know little of the subject, but who want to prevent any action being taken in their own town or village, and will gladly seize on any argument which will prevent their being taxed for sewers.

By ignoring all questions as to the disposal of slop-water, by quietly assuming that the only thing which pollutes water is excreta, by refusing to consider the question as to how all refuse and excreta are to be be buried in cities, and dealing only with the problem of scattered villages and cottages, it is possible to devise a great variety of schemes which can be made to appear more or less attractive. No one would suppose, from anything that appears in Dr. Poore's address, that the criticisms he makes had ever been made before, that the method he proposes had not been tried and found wanting, that its expense makes it impossible to carry out, or that his arguments about the value and importance of excreta as a fertilizer were not duly considered by engineers in every case where they have to deal with the problem of sewage disposal. He hardly even hints that in different localities different methods of disposal of refuse and excreta may be desirable, recognizes no difference in soils, has no reference to sewage irrigation—in short, nothing will do for him except to allow no water to be mixed with the excreta, and to bury these last in the ground near the house.

Such opinions and views would be of the smallest possible interest and importance to sanitary officials and engineers who have to deal practically with difficult problems of refuse and sewage disposal of towns and cities, were it not for the use made of them by ignorant demagogues to oppose efforts to secure sewerage for cities badly in need of it.

It is, however, about time that some such scheme as that of Dr. Poore's should appear; it has been a year or more since we have had one of this kind, and this one comes in time to assure us that the average crop of such literature is not yet falling off.—*Sanitary Engineer.*

CHOLERA AND COLD WEATHER.

IN a letter to the editor of the *New York Medical Record*, Dr. Reginald H. Sayre, of New York, quotes a number of instances to show that cholera is one of those scourges whose march is not stopped by heat or cold, high or low altitude, dryness or dampness, or any other condition of the weather.

He says that in 1830 the cholera appeared in Moscow in the month of October, and continued its ravages until the end of December, in spite of the severities of a Russian winter, and caused the death of 8,130 persons out of a population of 250,000, or about 1 in 30. From Moscow it went north to Yarasy, thence to Rybinsk, sixty leagues north of Moscow, where it appeared on March 19, 1831, in spite of the ice and snow which covered the ground.

In October, 1831, the cholera appeared in Great Britain, and continued there until March, 1832, doing most of its destruction in December. About one third of the people affected died. On March 27, 1832, the disease appeared in Paris, and the mortality was so frightful that 861 people died in ten days.

In 1848 the emigrant ship "New York" left Havre on the 9th of November, having no sickness on board, and no cholera being then in Havre. During the voyage the weather became bitterly cold. There were some German emigrants on board, from a town where cholera had prevailed, who had a trunk which had belonged to a man who had died of cholera. They opened the trunk, took out the clothing, and wore it. On November 22, a child died of cholera, and seven persons in all succumbed to it before reaching New York harbour. They were strictly quarantined, and the disease limited to those who died on Staten Island in the quarantine.

About this same time another vessel from Havre, bound for New Orleans, developed the cholera on the twenty-seventh day out, and, owing to imperfect quarantine regulations, the disease spread rapidly through the town soon after the arrival of the vessel, there being then no other cases in the United States except those in the quarantine on Staten Island. From New Orleans the disease travelled to Memphis, appearing there toward the end of December, and at St. Louis in the first week of January, 1849. Toward March several places in the Upper Mississippi valley were affected, and then gradually the disease moved east through Chicago, which it reached in May, to New York, which became infected then, *and not till then*, although the disease had been imported to the city six months previously, but had not been allowed to land; and the city in this way kept free from infection until the cholera effected a flank movement, by the way of New Orleans, and attacked her in the rear, having made its progress in spite of the winter, and having attacked the cities through which it passed in the cold weather.

These facts in regard to the prevalence of cholera in spite of cold, and the well-known futility of a quarantine on land, make any attempt to lull the medical profession into a false sense of security fraught with great danger to the country, and I have therefore wished to call attention to the fact that cholera is *not* stopped by cold, and that to be quarantined effectively it must be arrested in our ports, which can only be done by having a general quarantine under the direction of the federal government.

RANCID butter cannot be restored to a sweet, good ...le, but it may be greatly improved by washing in ...tly prepared lime water.

Jottings from the Journals

"Th' ingredients of health and long life are
Great temperance, open air,
Easy labour, little care."—*Sir Philip Sydney.*

Cannon Balls in Chronic Constipation.—The treatment of chronic constipation by abdominal massage, which has been systematically practised for many years with the best results by Professor V. S. Manasseïn, of St. Petersburg, has of late begun to find favour with many practitioners all over the world. Amongst others, Mr. Frederick Treves, of London, about two years ago, expressed approval of kneading the abdominal walls, a procedure which had been shortly before recommended by Dr. Krivïakin, of Dagestan (see the *London Medical Record*, August, 1885, p. 334; and April, 1886, p. 153). Dr. Herman Sahli, of Berne, has lately introduced (*Correspondenz Blatt für Schweizer Aerzte*, No. 19, 1887, p. 581) a somewhat startling modification of ordinary massage, which deserves to be more widely known. Massage by professional rubbers is expensive, besides being frequently objectionable in other ways. Dr. Sahli thinks that he has hit upon a plan which will make massage for chronic constipation cheap and easily available. The method, which its inventor warrants as effectual, consists in the patient rolling with his own hands a cannon-ball, or other round metallic mass, weighing from three to five pounds, up and down over his uncovered abdomen every day for five or ten minutes. The patient lies on his back during the performance, which should always take place at the same hour. The best time is the morning, before rising. Besides rolling the ball about, the patient should, from time to time, raise it to a certain height, and bring it down on his belly with some force. The whole abdominal surface must be conscientiously rolled every time. The ball may be warmed or wrapped in a woollen cover before use. In some patients this novel form of artillery practice takes effect almost immediately; in most the bowels are opened a couple of hours after the application; in the bulk of cases the constipated habit disappears in a few weeks, but relapse very frequently occurs when the daily rolling of the abdomen is discontinued. Dr. Sahli believes that his new therapeutic agent will, in spite of its formidable sound, become popular to the extent of generally replacing the lighter ammunition which (in the form of pills, &c.) has hitherto been used against the disease.—*British Medical Journal.*

Sanitary Appliances, Etc.

THE ST. GALL SWISS MILK.

FROM Mr. W. B. Tulloch, of 5, Philpot-lane, London, E.C., we have received samples of the St. Gall brand of Swiss milk. The milk is a perfectly pure preparation, devoid of admixture with any chemicals in the way of preservatives, and when mixed with water is practically indistinguishable in taste from ordinary boiled milk. The St. Gall brand is prepared with carefully selected cow's milk, and in this respect presents obvious advantages for nursery purposes, as well as for ordinary domestic use. In its composition it is consistent, and Mr. Otto Hehner testifies to its containing a larger proportion of albuminous matter than fresh milk. As regards its keeping qualities, we can testify to the excellence of the St. Gall brand; and the latter fact may explain the large consumption of this product on board many of the principal steamship lines. It is an excellent brand, and is certain to grow in public esteem.

"ELECTRICITY IS LIFE."
(TRADE MARK.)

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WORLD-FAMED

GALVANIC BELTS,

FOR the CURE of NERVOUS DISEASES.
HAVE RECEIVED TESTIMONIALS from
THREE PHYSICIANS to
HER MAJESTY the QUEEN,
THE ACADÉMIE DE MÉDECINE of Paris and
FORTY MEMBERS of the
ROYAL COLLEGE of PHYSICIANS of LONDON.

RECENT TESTIMONIALS.

GALVANISM *v.* CONSTIPATION and NERVOUS EXHAUSTION.

111, Upper Moss-lane, Manchester, 9th December, 1887.

Dear Sir,—I feel it my duty to acknowledge the great and unexpected benefit I have derived from your treatment. My case was one of chronic constipation and nervous exhaustion of over forty years' standing, and after trying various remedies without any effect whatever, I was persuaded to purchase your Combined Belt, which has resulted in not only strengthening my body and limbs, but, to my great surprise, has cured my constipation, and I now have as natural and healthy action of the bowels as I could possibly desire. You may make what use you like of my name and address.—Yours gratefully, THOMAS CAHY.

Mr. J. L. Pulvermacher, 194, Regent-street, W.

GALVANISM *v.* ASTHMA.

142, Hill-street, Glasgow, 6th December, 1887.

Dear Sir,—I have certainly derived much benefit from your treatment, and I have not had a regular attack of asthma since I first commenced your Band three months ago.—Yours truly, J. NAIRNE.

Mr. Pulvermacher, 194, Regent-street, W.

GALVANISM *v.* NERVOUS EXHAUSTION.

Hawkhurst, Kent, 5th December, 1887.

Dear Sirs,—I am glad to be able to inform you I have derived great benefit from your treatment after suffering for eleven years.

I beg to offer you my most grateful thanks for the kind interest you have taken in my case, and may God bless and prosper your work. I shall be pleased to recommend your treatment to anyone suffering like myself, and am—Yours obediently, E. SWANN.

Mr. J. L. Pulvermacher & Co.

GALVANISM *v.* LOSS of POWER in the HANDS.

10, Camperdown, Great Yarmouth, 4th December, 1887.

Gentlemen,—For some time I lost the use of my hands and was under the treatment of two doctors. They told me it was Paralysis and I was induced to try your Galvanic Bands.

I am thankful to say I have found great relief from your treatment, and can now do my necessary work and can lift things with safety.

I am very grateful for the benefit I have received, and you can make what use you like of my name.—Yours sincerely, LUCY MICKLEBURG.

Messrs. Pulvermacher & Co., 194, Regent-street, W.

GALVANISM *v.* EXTREME NERVOUS DEBILITY.

S.S. Dauntless, Surrey Commercial Dock, S.E., 3rd December, 1887.

Dear Sir,—I am glad to inform you that there has been a decided improvement in my wife's health since wearing your Galvanic Band. She is now in better health than she has been for the last four years, which I solely attribute to the use of your galvanic appliance.—Yours respectfully, C. DOBSON.

Mr. J. L. Pulvermacher, 194, Regent-street, W.

GALVANISM *v.* EXTREME NERVOUS DEBILITY and EXHAUSTION.

Kingston-on-Thames, November 19, 1887.

Dear Sir,—By persevering in the use of your Galvanic appliances, my health, which was completely shattered, has been restored, and the symptoms, only too well known to sufferers from the above complaint, have disappeared.

I will gladly answer any inquiries as to the genuineness and health-restoring properties of your appliances, especially when health has been lost through indiscretion and want of judgment.—Yours very truly,

Mr. J. L. Pulvermacher, 194, Regent-street, W. C. GORDING.

GALVANISM *v.* NEURALGIA and NERVOUS EXHAUSTION.

Pencoyd, Ross, Herefordshire, Nov. 10, 1887.

Gentlemen,—I am pleased to inform you that my brother has derived very much benefit from the use of your Galvanic appliance.

He has not had the Neuralgia once since wearing the Combined Band, and the tired feeling and loss of energy have quite disappeared.—Yours faithfully, M. E. MILES.

Messrs. J. L. Pulvermacher & Co., 194, Regent-street, W.

GALVANISM *v.* NERVOUS EXHAUSTION.

The distressing symptoms of Nervous Exhaustion and Debility are speedily removed by means of PULVERMACHER'S world-famed GALVANIC BELTS, which are so arranged as to convey a powerful electric current direct to the affected parts, gradually stimulating and strengthening all the nerves and muscles, and speedily arresting all symptoms of waste and decay.

ADVICE PERSONALLY or by LETTER, free of charge.

FOR FURTHER TESTIMONIALS, both Medical and Private, see new Pamphlet, "GALVANISM: NATURE'S CHIEF RESTORER OF IMPAIRED VITAL ENERGY," post free on application to

J. L. PULVERMACHER AND CO.,
GALVANIC ESTABLISHMENT,
194, REGENT-STREET, LONDON, W. (nearly opposite Conduit-street).

Our Letter-Box

"Conference [maketh] a ready man."—*Bacon.*

NOTICES TO CORRESPONDENTS.

All Communications for the Editorial Department (including Books for Review, Specimens of Sanitary Appliances, &c.), to be addressed to "THE EDITOR OF HEALTH," 2, PATERNOSTER-SQUARE, LONDON, E.C. *Those intended for the Publishing Office to be sent to* MR. A. P. WATT, THE PUBLISHER, *at the same address.*

RULES FOR CORRESPONDENTS.

OWING to the mass of letters which reaches us each week, we respectfully direct the attention of Correspondents, desiring replies in the LETTER-BOX DEPARTMENT of HEALTH, to the following rules:—

1. All questions are answered free of charge in the columns of HEALTH.
2. All letters must be legibly addressed to "The Editor of HEALTH, 2, Paternoster-square, London, E.C.," *and to no other address.*
3. Questions to which answers are desired by post, are so replied to solely at the Editor's discretion. If no answer is sent by post, the query will be replied to in the "Letter-Box" columns of HEALTH. A stamped addressed envelope must accompany all queries to which a private reply is desired.
4. Addresses of physicians and surgeons will, as heretofore, be forwarded FREE to Correspondents on their enclosing a stamped addressed envelope for reply.
5. Correspondents are requested to write on one side of the paper only, and to make their inquiries as brief as may be consistent with clearness.
6. From the necessity of sending HEALTH to press early in the week, no Correspondent can be replied to in the "Letter-Box" columns in the same week in which the inquiry is received. Replies crushed out of any issue will be found in the succeeding number.
7. No Post Cards must be used in sending queries. Violation of this rule deprives the sender of the privilege of a reply.

LETTERS TO THE EDITOR.

STANDING UNCOVERED AT FUNERALS IN INCLEMENT WEATHER.

SIR,—The death of the late Mr. W. Holt, a much respected Liverpool merchant and magistrate, from a chill caught when standing uncovered by the grave-side, has caused enquiries to be made of the Funeral Reform Association. Kindly permit me through your columns to point out that the Burial Service, which is the basis of the Society's action, contains directions which distinctly make for the preservation of the public health, and that it may therefore be inferred that mourners are not expected to do anything, or leave anything undone, to the imperiling of the body. The rubric, "The Priest and Clerks meeting the corpse, and going before it either into the Church or *toward the grave*," suggests carrying the body direct to the grave, instead of into the church, in case of danger of infection; while another rubric distinctly orders "earth to earth" burial, which method, writes Sir Lyon Playfair, an ex-President of the British Association for the Advancement of Science, "is as harmless a mode of disposing of the dead as burning." The adoption of all other necessary precautions seems to follow as a natural consequence, including mourners protecting the head in inclement weather.—I am, &c.,

F. LAWRENCE, *Hon. Sec.*

Weston Vicarage, York.
Dec. 28th, 1887.

CRUELTY TO CHILDREN.

SIR,—Will you kindly permit us to bring before your readers the claims of the work in which we are engaged in the London Society for the Prevention of Cruelty to Children. The following facts speak for themselves.

In our three years' history, since our founding at the Mansion House in July, 1884, we have dealt with 762 more or less guilty people, for the most part by moral influence. In 132 worst cases, many almost incredible, we have had resort to the law, and

obtained 120 convictions. Of the total number of 762 cases, we find that 333 were cases of injuries inflicted by assault, 81 of starvation (some of these of farmed-out babies and children insured), 130 of dangerous neglect, 32 of desertion, 70 of cruel exposure to excite sympathy in the streets, and 116 of other wrongs. Our efforts have not been confined to London, but have extended to many parts of the country. We do not interfere with mere parental indiscretion, but only with deeds of cruelty which render child-life unendurable, twenty-five cases ending with the victims' death. When punishment is inflicted, it is always followed by indirect, but real, supervision.

At this child-season of the year, we feel that our work must appeal very powerfully to all generous hearts. The following ladies will be glad to receive subscriptions:—The Countess of Iddesleigh, 23, Manchester-square; Lady Henderson, 4, Gledhow-gardens; Lady Whittaker Ellis, Buccleuch House, Richmond. Also at the office subscriptions will be gratefully received.—We are Sirs, yours, &c.,

R. RUTHVEN PYM, *Treasurer.*
BENJ. WAUGH, *Hon. Sec.*

Office of the Society—
7, Harpur-street, Bloomsbury.

QUERIES AND ANSWERS.

REPLIES: GENERAL, SANITARY, AND MEDICAL.

E. D. W.—Try tincture of the perchloride of iron and apply this to the wart. If not cured, write again.

A WELL-WISHER OF "HEALTH."—Thanks for your amusing epistle. As you appear to be so well versed in all the details of editing and managing a journal, we may give you in return a piece of "advice gratis," and suggest that you should start, edit, and manage a newspaper of your own. It would be certain to be an unqualified success—judging from the confident tone you adopt in advising us.

GLASGOWEGIAN.—Inhale at night the vapour arising from a pint of very hot water to which a teaspoonful of Friar's Balsam has been added. After your meals, thrice daily, take a dessertspoonful of Scott's Cod Oil Emulsion with Hypophosphites; and when you can, reside at the coast, *e.g.*, Rothesay.

PATIENCE.—See advice given to "Glasgowegian" above. If not cured, write again.

C. R.—Your trade may be somewhat against you, but we should advise you to rest after your meals, and to take five drops of Pure Terebene on a piece of sugar, after your food. Your diet should be very light, and if any constipation exists, correct this by taking twenty drops Cascara Cordial once or twice daily, and by partaking largely of vegetable food.

F. J. B. (Highgate),—Certainly you are not wrong in taking tea, if, as you say, cocoa in all its forms disagrees with you. Try the Pure Terebene after food (as ordered to "C. R." above) as a corrective of the pain you suffer. If you are not relieved thereby, write again with fuller account of your diet and habits.

C. G. RECKATT.—1. Messrs. E. Ward & Co., of Bradford, will supply you with woollen underclothing for self and children. 2. The teeth are not "bones" but are developed, like nails, from the skin-layer of the body. 3. Howie's Filter (advertised in our pages) is excellent in every way.

M. P. O.—1. Feed the child on Mellin's Food only. It is non-farinaceous and perfectly safe. 2. Woodward's Gripe Water should be used, and kept in your house as a safe infant-medicine.

FIBER.—Wear a suspensory bandage; avoid constipation; and bathe the parts night and morning with a lotion composed of one part hazeline added to five parts cold water. Read also the pamphlet (for information regarding remedies for constipation, &c.) recommended to "Xeno" in the present number.

T. A.—Try the effect of giving the patient twenty drops of Collis Browne's Chlorodyne, when the symptoms are severe, in a little water; and repeat the dose in four or five hours, taking not more than two doses per day, and only on alternate days. Vegetable foods should be avoided.

MAY F.—Give the Eau Lodoïs of the French Hygienic Society, 56, Conduit-street, Regent-street, London, W., a trial. This Society will advise you regarding your hair ailment.

NOP.—In such a case, we should advise you to try the effect of taking twenty grains bromide of potash in a wineglass of water twice daily when the pains are severe. Use "Hippacea" as an outward application regularly, night and morning.

BETTY.—Superfluous hairs can only be satisfactorily (and painlessly) removed by electricity. Send 4½d. in stamps to the Publisher of HEALTH, and obtain a copy of No. 149 of this journal, and read the article therein given on this method of removing hairs. We can send you address of a London specialist (who removes hairs in this way) on receipt of stamped addressed envelope.

A FEW CANDID FACTS.

EVERY careful observer who has sought to keep pace with the march of events, has noted the alarming increase of certain peculiar physical troubles within the past few years. These troubles have come at unexpected moments, and in a most treacherous way. They have manifested themselves in innumerable forms, but they have always had the same cause. They have not afflicted the minor parts of the body, but have gone direct to the strongholds of the system, and their work has usually been as prompt as it is fatal. Their treacherous and deceptive nature has often prevented a careful analysis of what causes them, and, as a result, intense suffering and final disaster have usually ensued. The real cause, however, has been a derangement of the kidneys, and all of these troubles are, in fact, the first symptoms of the terrible Bright's disease, which has cast its dark shadow over so many homes in the land, and is increasing wonderfully and continually. It is now conceded by the ablest physicians in every land, and by eminent scientists the world over, that this disease is the result of blood poisoning. This poisoning is brought about by wasted and unhealthy kidneys that permit the poison to remain in the blood, instead of throwing it from the system. To purify a stream we must go to its source, and to cure a disease we must *remove the cause.* It being true that nine-tenths of all human ailments are caused by diseased kidneys or liver, the only certain way to cure these troubles is by treating the organs which cause them. How intimately the kidneys are associated with the entire system may be understood from the fact that over 1,000 ounces of blood pass through them every hour, being more than 200 gallons, or nearly one ton in the course of twenty-four hours. This vast mass of living fluid is sent to every part of the body, and if the kidneys are diseased the impurities that are in the blood are not removed, and hence pass through the veins, carrying disease in some one of its many terrible forms. The horrors which accompany most of the diseases caused by disordered kidneys and liver cannot be described in print, while the dangers surrounding them are even greater than the agony. And yet a person may be troubled for months without knowing the cause of the diseases that have attacked him. Some of the symptoms of the first stages, any one of which indicates disordered kidneys or liver are these: Pains in the back and around the loins, severe headaches, dizziness, inflamed eyes, a coated tongue and a dry mouth, loss of appetite, chilly sensations, indigestion (the stomach never is in order when the kidneys or liver are deranged), a dryness of the skin, nervousness, night sweats, muscular debility, despondency, a tired feeling (especially at night), puffing or bloating under the eyes, &c.

The above are a few of the hundreds of symptoms which indicate the beginning of aggravated cases of kidney or liver difficulties, and they require instant attention. If these symptoms are not checked at once, they are almost certain to result in some one of the many terrible diseases of the kidneys. But unpleasant as all the symptoms, and even these diseases may be, they are as nothing compared to the last stages of the complaints.

There is but one known remedy that has ever been able to cure serious kidney troubles or control those great organs when once deranged, and that remedy is Warner's Safe Cure. The test of merit is in what has been accomplished, and knowing of cures almost numberless in England, Canada, and the United States, many of them chronic and given up as incurable, makes us bold to say in all sincerity that for all diseases of the kidneys, liver, and urinary organs, Warner's Safe Cure stands alone, not only in point of excellence, but in the wonderful results it has achieved. The remedy can be had of all chemists at 4s. 6d. per bottle.

TOLU.—We should certainly advise the patient to begin treatment by taking twenty drops Cascara Cordial once or twice daily, an hour before food, in water. Let the effect of this upon the constipation be watched, and let the patient eat freely of stewed fruits, whole meal bread, &c., and take Vichy Water as an ordinary table water.

XENO.—What you were told is perfectly correct; but to gain full information on the subject of your health, and to save you from falling into the hands of quacks, read the pamplet "A Lecture to Young Men," post free 1s. 1d., from Mr. Renshaw, 356, Strand, London, W.C.

PAINTER.—Take twenty drops of Fer Bravais in water, after your meals, thrice daily, and see that fruits and vegetables are regularly taken as part of your dietary. For the skin, use Bayley's Soap and soft water. If not bettered, write again.

C. FORMAN.—Press out the pimples as soon as they form; then sponge the skin with Bayley's Eau de Cologne or toilet vinegar. Wash regularly with Bayley's Spermaceti Soap and tepid water, and use brisk friction to the skin with a hard towel. Internally, also, take fifteen drops Fer Bravais after your meals in water, thrice daily. Avoid alcohol, and let your food be largely of vegetable nature for a time.

CRANIUM. — See and follow advice given to "R. F." in the present number.

AN ANXIOUS ONE.—Your bedroom is certainly much too near the closet; and if, as you say, the latter is destitute of ventilation and only separated by a thin partition from your sleeping apartment, we advise you strongly to seek a healthier residence. It is not at all improbable that the sewer gases may be perceptible in your room, and this is in itself a source of danger.

P. HAMILTON.—The only recent reference we can find regarding the use of glycerine in constipation to which you allude is that by Dr. Althaus, who relates that a Dutch physician has found the injection of half a teaspoonful or a teaspoonful of glycerine to be of the greatest service in habitual forms of the ailment named. The explanation is, that glycerine acts as an irritant to the nerves of the bowel and causes muscular action.

CURIOUS. — Antipyrin should only be used by a medical man. The most convenient form is that of the tabloids made by Burroughs, Wellcome & Co. In brow-ague its effects have been well tested, and have been wonderful. The dose ordered in reported cases was eight grains, repeated each half hour till the migraine ceased.

B. GILLOW. — Use Messrs. Howie's Filter, advertised in our pages. The water supply you are drinking evidently requires the use of such a filter.

MARY P. — Miss Walker, 62, Gower-street, London, W.C., is a qualified lady-physician, whom you may safely consult.

B. M. O.—Take a teaspoonful of the ammoniated tincture of quinine in a wine-glass of water, thrice daily, between your meals, as a tonic and stimulant suited to your case.

T. ONICK.—Read the pamphlet recommended to "Xeno" in the present number, and follow out its instructions.

REPENTANCE.—You need have no fears whatever. Simply live plainly and regularly, and take plenty of open-air exercise.

G. A. H.—We may say, firstly, that only the accurate examination of your chest by an experienced physician can assure you of the state of your lungs, and we shall be glad to send you address of such physician, if desired, on receipt of stamped addressed envelope. As regards your other remarks, we may say that the hæmoptysis in your case appears to have been of very slight character, and did not necessarily indicate any serious lung weakness. Are you sure the blood came from the lungs at all? Your course is clearly that of avoiding all chills, and especially at night. Wear woollen undergarments all winter. Those made by Messrs. Ward & Co., of Bradford, are the best. This will be a great protection to you. You should not indulge in gymnastic exercises without consulting a physician. Take a dessertspoonful of Scott's Pure Cod Oil Emulsion after your meals as long as the cold weather lasts.

OMEGA.—1. Yes; quite as nutritious as home-fed mutton. 2. In many cases these fruits, &c., can be safely taken. You must judge by your own personal experiences. 3. Fattening, nutritive, and preventive of tubercle-formation.

R. F.—Your hair-weakness is the result of daily washing the head with cold water. This is a practice most injurious to the hair. See and follow advice given to "Job Ford" in last week's HEALTH. Use a soft brush only, and avoid hard combs. Wash the hair once in ten days only or so with Bayley's Spermaceti Soap and tepid water.

"BRITANNIA RULES THE WAVES."

(From "The Portsmouth Times and Naval Gazette.")

When one has visited the Royal Dockyards at Woolwich and Chatham, and inspected the great ships of war with their powerful armament which the Admiralty are providing for the protection of Her Majesty's extensive coast lines, he is at once satisfied that "Britannia still rules the waves." While there are obvious differences of opinion between experts, relative to the value of large and small war-ships in action, one has only to come to Portsmouth Harbour and see such formidable ships as the "Inflexible," the "Iron Duke," the "Devastation," and others of equal armament, costing upwards of a million sterling to produce, with myriads of small torpedo craft, to become convinced that in the matter of naval construction, England is not only keeping abreast with other countries but is excelling them. Portsmouth Dockyard and Portsmouth Harbour are names familiar throughout the civilized world. It is here that all the war vessels and magnificent troopships of Her Majesty's service are fitted out for foreign stations. It is said that these ships are supplied with every conceivable necessity for the comfort of the officers and men; every precaution is taken to provide against sickness and disease caused by the sudden change of climate to which troops are subjected. It is said that every vessel belonging to Her Majesty's service leaving Portsmouth is not considered ready for sea without a liberal supply of St. Jacobs Oil. This marvellous remedy is not only used extensively on shipboard, but also in the several dockyards above mentioned. Mr. Frederick Payne, who lives at 62, Gladstone-street, Landport, Portsmouth, and who has been connected with the Portsmouth Dockyard for upwards of fourteen years, hands us the particulars of the most miraculous cure effected by the use of St. Jacobs Oil in the case of his wife, who for eight years had been a fearful sufferer from rheumatism. Her limbs and shoulders were swollen to three times their natural size; her arms and hands were shapeless: much of the time her right shoulder was swollen to that extent that the top of the shoulder and the side of her face came together, and she suffered the most intense pain. Four years ago the disease settled in her back, making her completely helpless, the heart became so much involved that she was unable to make the slightest exertion without experiencing great difficulty in breathing. The only way she could lie in bed was by having the back of a chair set up behind her, and padded with pillows. Her husband was obliged to carry her up and down stairs, night and morning, and she suffered such excruciating agony that she repeatedly fainted away. She became so much reduced in flesh that Mr. Payne says she was little more than a skeleton. She was treated by the best medical skill in Portsmouth and vicinity, employing four medical gentlemen in all, each of whom told her and her husband that they could do nothing whatever for her—that her case was chronic and past all hope of recovery. Last summer, being a little better, she went to a small town in Sussex for a few weeks, where she had another violent attack, suffering the most intense agony, and here follows a very interesting and most providential circumstance: It seems that the lady to whose house Mrs. Payne was carried had herself been cured of rheumatism in the shoulder by the use of St. Jacobs Oil, and was very urgent in her request for Mrs. Payne to try it. In less than five minutes after the first application Mrs. Payne began to experience cessation from pain. After the second application the pain had almost entirely disappeared, and before the contents of one bottle was exhausted, the pain and swelling had entirely gone, and, although weak and feeble, Mrs. Payne could walk about the house and grounds. From that time on she made a most satisfactory, rapid, and permanent recovery. Both Mr. Payne and his wife say that she has not been as well as she is now for fourteen years. Mr. and Mrs. Payne are most respected people; both are members of the Wesleyan Chapel in Landport; and Mr. Payne, as above stated, has been employed at Portsmouth Dockyard for fourteen years. The above was such a remarkable case that some of the chemists and dealers in Landport were called upon with the object in view of obtaining further information respecting this marvellous remedy, among others, Mr. Timothy White, 158 and 160, Commercial-road, Landport, Portsmouth, when interviewed, stated that the demand for this popular remedy was rapidly increasing, that he never buys less than sixty dozen at one order. When a remedy possesses such remarkable curative properties as those above mentioned, it is not to be wondered at that Her Majesty's troopships are never considered ready for sea until a supply is on board.—[2308.]

PERDITA. — The following is a good lotion for the removal of freckles:—Sulpho-carbolate of lime, two ounces; glycerine and rose water, of each, twenty-five ounces; alcohol, five ounces. Mix. Wash the skin twice in twenty-four hours, letting it remain damp with the lotion for half-an-hour.

B. LOCKE.—One of Walsh & Brierley's Body Belts would be likely to afford you relief and support. These Belts are sold by Messrs. Lindsey, of Ludgate-hill, London, E.C. Drink Æsculap Water regularly, as calculated to relieve and cure the symptoms you name.

A. MARTIN.—1. Wash the feet regularly with Field's Samphire Soap night and morning, and rub "Hippacea" into the feet thereafter (Bowden, 43, King William-street, London, E.C.).

A FATHER.—Only the personal examination of a case of deafness can indicate its cause. If you are not satisfied with the hospital treatment, consult an aural surgeon. We can send you address of such, if desired, on receipt of stamped addressed envelope.

T. BLACK.—You should not take a warm bath each morning; you should try a tepid bath, and then gradually accustom yourself to a cold one. The warm bath is relaxing; you require tonic measures.

GRECIAN.—In taking a cold bath in the morning, headache is often avoided by the head being kept free from being wetted. There is, of course, no fixed rule, and in some persons, wetting the head before bathing in the sea or at home may prevent headache. You should act on these hints.

E. M.—Try applying the following lotion to the irritated parts:—Bicarbonate of soda, one drachm; glycerine, an ounce and a half. Mix. Label, "For outward use only." Before applying this lotion, wash the parts with Bayley's Soap and tepid water. If not cured, write again.

PETER HAY.—Use, thrice daily, an injection made by adding a teaspoonful of Condy's Fluid Disinfectant to a tumbler of tepid water. Take a dose of Lamplough's Pyretic Saline in the morning, occasionally, if required.

TABLETS
A
ough any

F. F. L.—The patient only requires due nourishment. Give him Brand's Beef Essence daily, and let his diet include white boiled fish, boiled chicken, stale bread, with a little pure malt liquor at dinner. We advise you to try "Bokŏl" (advertised in our pages) as a nutritious malt extract equal to the best stout in respect of its qualities.

ALEXANDER S. — Dr. Pierre's Eau Dentifrice should be used night and morning by you as a mouth wash, and the Tooth Powder of Dr. Pierre for the teeth. These preparations prevent tooth decay. Use a brush of moderate hardness and tepid water.

MELTON PRIORS.—You must persevere with the treatment ordered, and keep your mind at rest. Try a dose of Lamplough's Pyretic Saline, on rising, in the morning, and follow out the other food directions already given you. You will get quite well in time. Take a cold sponge bath each morning, and use brisk friction thereafter. See also that you take plenty of open-air exercise.

PHILLIS.—You should look well to your general health. Premature greyness often results from ill-health or mental worry. Take an iron tonic (Fer Bravais, fifteen drops, thrice daily, in water, after your food), and use a little Brilliantine each morning as a hair application. Brush the hair night and morning with a soft brush only, and wash it once a week with Bayley's Spermaceti Soap (17, Cockspur-street, Pall-Mall, London, S.W.) and tepid water.

T. P. G.—1. Try Bayley's remedy for piles (17, Cockspur-street, London, S.W.), and see that you avoid constipation by the use of Æsculap Water, taken in the morning, and by adopting a vegetable dietary. 2. Rest after your meals will probably cure your ailment. Try also taking five drops of Pure Terebene on a piece of sugar after food. Van Houten's Cocoa should be taken by you regularly as a useful dietetic. If not relieved by these directions, write again.

SCOTLAND.—Of course, Mr. Wolff could only treat you in London. In your case there is certainly no evidence of writer's cramp. We think you are only nervous or low in tone. Try the effect of taking a teaspoonful of Syrup of the Hypophosphites in a wineglass of water, thrice daily, after your meals. Read, also, the pamphlet recommended to "Xeno" in the present number. If not cured, write again.

C. R.—You might try painting the corns with tincture of arnica, or with liquor arsenicalis (this latter to be labelled, "Poison—for outward use only"). If these remedies fail, visit a chiropodist, and have the corns extracted.

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PEPPER'S TARAXACUM and PODOPHYLLIN. A fluid combination for derangement of the liver, particularly when arising from slight congestion. By gently stimulating the action of the liver and slightly moving the bowels, the heavy drowsy feeling, headache, pain beneath the shoulders, at the chest after eating, unpleasant taste in the mouth, and manifold other indications of dyspepsia, are removed. Bottles, 2s. 9d. Sold by all chemists.

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